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NOTICE TO SUBSCRIBERS

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DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. The Railway Gazette *possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders No. 1190 *of* 1940, *and No.* 359 *of* 1941

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—
Mondays to Fridays 9.30 *a.m. till* 5.0 *p.m.*
The office is closed on Saturdays

Coal Transport Problems

MR. GILBERT S. SZLUMPER, who has joined the Board of Trade as adviser on transport, is concentrating his energies on the coal position. At the moment the coal transport position presents few difficulties; the main problem is presented by supplies of fuel. As the days shorten, however, there is little doubt that the position will become tighter, but Mr. Szlumper is convinced that given the men—and he believes they will be forthcoming—the coal industry will be able to raise a sufficient output to meet essential requirements, and that, if transport difficulties are no greater this winter than they were last, the railways will be able to carry the coal, but he does not disguise the fact that the position will not be easy. The Inter-Railway Wagon Control which came into operation at the beginning of March last has worked satisfactorily and enables wagon needs to be fulfilled as they arise. At the moment, largely for seasonal reasons, there are some 30,000 wagons idle, but these and more will all be required in the coming months. The problem of moving coal with a minimum of work at the marshalling yards has been alleviated by making up block trains comprising wagons destined from one coal producing area to one consuming district. The G.W.R. in particular has also done much to help by making up its wagons in station order.

The Kent Fruit Traffic

The principal fruit picking areas in Kent are situated at Faversham, Marden, Newington, Rainham, Sittingbourne, Selling, Staplehurst, Teynham, and the Medway Valley (Farleigh to Paddock Wood). One of the largest farms is Sir Walter Berry's at Selling, near Faversham, where hops and fruit are cultivated. The fruit from this one farm is despatched to all parts of the country. More fruit than in previous years is being despatched to the Northern and Scottish industrial areas, such as Liverpool, Manchester, Newcastle, Glasgow, and Aberdeen, and Newcastle in particular is a heavy market area. When the fruit picking gets into its stride, special express freight trains are run from the Kent fruit districts to the Northern companies *via* Hither Green. The fruit is picked in the early morning and, with that of the previous afternoon, is loaded at the Kent station later in the morning to leave on the afternoon freight special which arrives in the Northern markets the next morning, so that the produce is often on sale less than 24 hours after it has been picked 200 or 300 miles distant. The day before the traffic is expected to be despatched the farmer advises the local stationmaster of the probable quantity of fruit, and the Divisional Control is advised. In a normally good fruit year 250 covered vans a day are used for the Kent fruit traffic. For soft fruit such as strawberries the railway provides trays which are fitted into these vans. The farmer loads his chips on these trays, and takes them to the station. Usually one tray holds 80 chips of strawberries and is equal to one consignment. These covered vans work in circuit (up loaded from Kent and back empty from markets) and are cleaned out after every journey. The station staff does the loading in Kent, and in the course of many years' dealing with this type of work has become expert in handling fruit traffic; in fact some of the porters have had almost 50 years of service on fruit loading. The fruit season begins in early June with soft fruit and finishes early in October with apples.

A Glimpse of Wartime Working

In order to give the lay press a demonstration of how the British railways are handling traffic, and continue to do so despite all the difficulties of wartime, the Ministry of Information recently organised a visit to one of the principal mechanised marshalling yards, where large quantities of the raw materials of industry are passed through on their way from the points of origin to consumers. As Sir Ronald Matthews, Chairman of the Railway Companies' Association, said in a message to the party, the railways were concerned that the public should know that they have one policy only for the present, namely, the utilisation of the whole of their resources for winning the war. Undoubtedly, what the news-

paper men saw tended to confirm this; and to one already familiar with railway working it was interesting to observe the surprise of many representatives of the lay press at the intricate organisation and elaborate mechanism which are part of the railway business. They were shown, for example, a train in the reception sidings being arranged for cutting up into some 40 sections, then pushed up the hump, and the wagons, under the impetus gained by running down the other side, diverted into the various sidings, where they would eventually form trains for different destinations. They were shown how this is done: how the message is sent from the hump to the control tower, and how the men in that tower, with their intricate electrical and hydraulic apparatus, direct the trucks in such a way that, without mishap, they form themselves into trains ready for despatch. The journey to and from this particular yard afforded the opportunity for railway experts who accompanied the party to answer many questions and explain obscure points concerning railway traffic operating in general, and there is no doubt that such a visit as this must help towards the avoidance of misstatements in the press based upon misinformation, and a general improvement in the understanding between the railway companies and the general public.

Overseas Railway Traffics

There is still a general continuance of the improvement in the traffic returns of the British-owned Argentine railways, and the increases shown by the Buenos Ayres & Pacific and the Central Argentine for the first six weeks of the current financial year are already above the 1,000,000 pesos mark. In the fifth and six weeks of the year the Central Argentine records an advance of 377,850 pesos, and in the same period the Argentine North Eastern shows an improvement of 89,500 pesos, and the Entre Rios one of 163,900 pesos. In the 32nd week of 1941 the San Paulo (Brazilian) Railway, by an increase of £5,585, recovered some of the losses experienced in recent weeks, and is now £17,887 to the good on the year.

	No. of week	Weekly traffics	Inc. or decrease	Aggregate traffic	Inc. or decrease
Buenos Ayres & Pacific* ...	6th	1,331	+219	8,133	+ 1,460
Buenos Ayres Great Southern*	6th	2,105	+352	11,744	+ 228
Buenos Ayres Western* ...	6th	767	+104	4,489	+ 707
Central Argentine*	6th	1,718	+252	10,053	+ 1,282
		£	£	£	£
Canadian Pacific	31st	849,200	+163,400	24,689,000	+5,865,600
Bombay, Baroda & Central India	20th	316,275	+ 93,825	3,872,475	+ 263,625

* Traffic returns in thousands of pesos

The Leopoldina Railway is continuing its previous increases and in the 31st and 32nd weeks of 1941 added £12,341 to its previous gains, making the advance to date £85,061.

Transverse Fissures in Rails

A further lengthy bulletin has been issued by the University of Illinois, dated March, 1941, reviewing the whole course of the investigation which has been in progress for ten years, under the joint auspices of the University and the American railways and railmakers, into the problem of the internal fissure in rails. This latest bulletin (see our issue of August 8) adds little to available knowledge. Of all the statements made, the most notable appears to be that, out of 3,000,000 tons of controlled-cooled rails that had gone into service up to June, 1940, by October of that year there had been only four fissure failures, all easily traceable to defects which had nothing to do with shatter-cracking. Until now all efforts to discover a non-destructive rail test which will reveal the presence of shatter-cracking, in new rail at the mill, have failed owing to the minute size of these discontinuities of the steel structure in their primary stage. But the investigators favour the addition of a bend test to the falling weight test for rails, and are now setting out to formulate a standard bend test, similar to that in Continental rail specifications, as well as standard methods for applying controlled cooling. In regard to the latter, systematic research has shown that the length of time spent by the rails in the cooling-boxes and the rate of cooling are of greater importance than the temperature of entry and withdrawal. It is curious that no reference is made in this bulletin to the Sandberg researches into shatter-cracking, which have had such valuable results in perfecting the methods of controlled cooling of rails that are now general, especially as the process used in America is carried on under licence from this British firm.

Drowsy on the Footplate

Major G. R. S. Wilson, whose report on the Brentwood, L.N.E.R., collision on February 10, when seven lives were lost, appears in summary on page 200, concludes that the driver of the colliding train had become drowsy and may even have been asleep. He had admittedly not seen the two signals—at caution and stop—in rear of the standing train, which had pulled up for want of steam and was in full view, nor did he awake to the position until the last moment. To his credit be it said, he put forward no excuse for his tragic lapse, which occurred on a clear day, and where signal sighting was very good. His fireman, who had known him to be drowsy once or twice before, was busy with the fire on the Brentwood bank and happened not to be looking ahead himself at the time. It is fortunate that nobody was in the telescoped portion of the colliding train, or casualties would have been much worse. This is a case where an approach-location warning, advocated by some for colour-light signal installations, might have brought the driver to attention. Falling asleep has occasionally been heard of in connection with some unexplained disasters, probably the best known instance being the derailment on the L.N.W.R. at Shrewsbury on October 15, 1907, when Sir Arthur Yorke concluded that the driver had certainly been asleep and went so far as to say that he was forced to believe that "sleeping, or what is almost the same thing—dozing, for short periods on the footplate of an engine, either voluntarily or involuntarily, is not uncommon." He said that he had received many letters from retired enginemen, from one of which he quoted, supporting this view.

Steel for U.S.A. Railways

According to a statement appearing in a recent issue of our American contemporary the *Railway Age*, the Class I railways and the builders of locomotives and rolling stock in the U.S.A. estimate that they will need nearly five million tons of steel in 1941. The steel requirements of the railways include 2,794,304 U.S.A. tons (2,000 lb.) already on order and 2,120,252 tons yet to be ordered. A total of 3,313,420 tons is for direct delivery to the Class I railways, of which 2,085,005 tons are now on order and 1,228,415 tons outstanding. The requirements of the wagon builders, according to their estimates, total 1,497,514 tons, of which 685,721 tons are on order and 811,793 net tons are yet to be ordered, and the locomotive builders will require 103,622 tons of steel for railway work, of which 23,578 tons are on order and 80,044 tons are indented for. The estimated requirements of the wagon builders include steel for 13,400 vehicles which, although not ordered by May 1, have to be completed by October 1, and 25,000 wagons for which formal orders have not been received by the builders up to May 1 but of which delivery has to be made between October and December. Orders for 43,539 freight wagons were placed before May 1. In the view of our contemporary the estimate of the railways for steel required during the present year may actually understate the full requirements, considering the programmes now being carried out by the railways to meet the growing demands of traffic and national defence, and this is indicated by the fact that the consumption of finished steel for railways and railway equipment totalled 5,605,000 tons in 1929 and 5,817,000 tons in 1926.

Progress of Trans-Canada Air Lines

In reporting a surplus of $539,263 during 1940 Trans-Canada Air Lines states that the company adopted a wartime policy of maximum service to the Post Office department, the armed forces, and that section of Canadian business engaged particularly in war production. The annual report of the Board of Directors noted that events of the past year included the establishment of a second transcontinental service, of

service to Moncton from Montreal, and to London and Windsor from Toronto. Gross revenue in 1940 was $4,592,383. Passenger earnings totalled $1,574,217; mail, $2,832,363; and express, $39,488. Operating expenses were $4,053,120 and included $2,637,313 for operation, maintenance, and depreciation of aircraft; $794,645, operation, maintenance, and depreciation of ground facilities; $301,256, traffic and general administration, and $187,500 interest on capital invested. Notwithstanding rising prices, operating costs were reduced from 88·4 cents a mile to 76·9 cents, or 13 per cent. Revenue passengers numbering 53,180 were carried in 1940, compared with 21,569 in 1939, an increase of 150 per cent. It was not possible fully to meet the demand for passenger service on a number of T.C.A. routes during the summer and early autumn months. The average passenger journey was 551 miles. The number of miles flown daily in regular air mail service at the close of 1940 was 15,144, compared with 8,188 miles at the close of 1939. Mail carried in 1940 was 927,037 lb., an increase of 65 per cent. over 1939. Air express shipments totalled 105,788 lb., compared with 45,819 lb. in 1939. The mileage of routes operated in 1940 was 3,662. At the end of the year T.C.A. was flying 15,144 miles daily. Its aircraft flew a total of 5,258,984 miles during the year for a total of 32,552 hours. Since operations were begun in September, 1937, Trans-Canada planes have flown 10,433,691 miles during 65,291 hours in the air. During the year 1940 the operations and traffic headquarters were transferred from Montreal to Winnipeg. At the end of 1940 the staff numbered 789.

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Instructional Models in Railway Schools

Railways in many parts of the world have established schools for staff training. In those dealing with signalling, block working and other features of traffic operation model railways have often been provided, complete with miniature locking frames, point and signal fittings, and full-size block apparatus to be used in the regulation manner to handle the "traffic" on the model. Such arrangements are excellent but, of course, rather expensive, and much can often be done with the aid of simpler materials, which can frequently be got together when the cost of a scale model is prohibitive. As the article on page 191 by Mr. H. C. Towers describes, the B.B. & C.I.R. has adopted the plan, used among other places at the locomotive running shed classes in Belgium, of providing a stout roll-up track diagram of typical layouts on which neat, but simple, signals, signboards, trains, etc., can be placed and moved to illustrate operating principles and rules. More use might well be made of devices of this kind, which are readily made, stored and even carried about.

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"Co-Ordination of Problems"

A correspondent asks us to explain exactly the function of one who is charged with the duty of "co-ordinating problems." His question arises from the caption to the picture of Mr. Gilbert S. Szlumper which appeared in our associated contemporary, *Shipbuilding and Shipping Record*, last week. This caption stated that Mr. Szlumper's new function was "to co-ordinate transport problems," and was no doubt based upon the statement made by Sir Andrew Duncan in the House of Commons when he announced Mr. Szlumper's appointment, that his task was "the co-ordination of all transport problems by rail, sea, and canal." We sincerely hope that Mr. Szlumper will exceed his duties, at any rate to the extent of solving some of the problems which he has to co-ordinate. It would be of little service to the country merely "to place things in proper position relative to one another and to the system of which they form parts" (which is a dictionary definition of "co-ordinate") if the things so manipulated were only problems. It may be that Sir Andrew Duncan was more ambitious than he said, although there does seem to be an unfortunate tendency in Government circles to imagine that the way towards the solution of problems is merely to "co-ordinate" them. Experience provides evidence, in the accumulation of unsolved problems, that many of the amalgamations (or "co-ordinations"), which have been so conspicuous a mark of the past couple of decades, were based on this erroneous supposition.

Mauritius Government Railways

RAILWAY communication in the island of Mauritius, which has an area of about 720 square miles (nearly equal to Surrey), dates from 1864 when the North line from Port Louis (the capital) to Pamplemousses was opened. Two years later the Midland line was inaugurated. As shown by the report for the financial year ended June 30, 1939, which we have received from Mr. H. C. M. Austen, C.B.E., General Manager & Engineer, the Mauritius Government Railways consist of 106¼ miles of running lines of 4 ft. 8½ in. gauge, and the Bois Chéri Light Railway (from Rivière du Poste to Mexico and Richebois), 13⅝ miles of 2 ft. 6 in. gauge. The principal lines are (i) the Midland, 35¼ miles, of which 4 miles are double track, running from Port Louis across the island to Port Mahebourg on the east coast, with a summit level of 1,800 ft. at Curepipe, and some gradients of 1 in 26; and (2) the North line of 33½ miles from Port Louis to Grand River South East and Bel Air. It is proposed to close the passenger and parcels traffic of the Montagne Longue branch of 3½ miles from Terre Rouge station on the North line to Montagne Longue. A saving of Rs. 10,000 is estimated from this action. The railway administration works under contract four 6-ton lorries and trailers and three 3-ton lorries, which earned in the year 1938-39 a gross profit of Rs. 29,858, as compared with Rs. 26,032 for 1937-38. It also operates a door-to-door road and rail service, which is adversely affected by the increased number and capacity of private lorries.

Though the previous records were again broken in 1938 by the sugar crop reaching a total of 321,310 tons, the gross receipts in the year under review showed a decrease of Rs. 39,571. Passenger revenue was down Rs. 34,102, chiefly because of bus competition. Revenue from general goods traffic apart from sugar and canes carried by railway showed a reduction of Rs. 55,958 as compared with 1937-38, and the combined goods traffic both by rail and railway lorries earned Rs. 41,884 less. Receipts from sugar traffic were Rs. 1,276,416 and from general merchandise Rs. 163,473. Some operating figures are compared in the accompanying table:—

	1937–38	1938–39
Passengers	2,653,136	2,380,524
Paying goods, tons	487,292	453,342
Train-miles	437,873	416,669
	Rs.	Rs.
Passenger receipts	416,479	382,376
Goods receipts	1,481,889	1,460,695
Total receipts	2,039,835	2,000,264
Total expenditure (excluding Rs. 300,000 for renewals)	1,824,322	2,265,357

Ordinary working expenditure amounted to Rs. 1,702,033, or Rs. 58,397 more than in 1937-38. The increase is due to the greater tonnage of sugar carried and the higher price of coal. There are now three miles of flat-bottom rails on steel sleepers with K fastenings. It is expected these sleepers will give satisfactory results both in durability and efficiency of running.

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Finsbury Park Station

FINSBURY PARK station, one of the most important L.N.E.R. suburban junctions, is now an octogenarian. On June 28, 1861, the 23rd anniversary of Queen Victoria's Coronation, the former Great Northern Railway announced that a new station would be opened at Seven Sisters Road on July 1, and Seven Sisters Road station, as it was then named, was duly opened on that date. Two bare wooden platforms were provided and the train service consisted of 8 down and 7 up trains daily. Nearby Hornsey Wood, with its tea garden, made the locality served by the station a favourite pleasure resort and it is worth recalling that at that time there were only five stations between King's Cross and Hatfield, namely, Holloway (closed 1915), Hornsey, Colney Hatch (now New Southgate), Barnet (now New Barnet), and Potters Bar. In 1863, a through service to Farringdon Street over the Metropolitan was begun, and the branch to Edgware was opened in 1867. The same year saw the quadrupling of the lines through the station, for Midland Railway trains from Hitchin were then using King's Cross. In 1868, when Great Northern trains to Farringdon Street were transferred to the newly opened "widened lines" (specially built by the Metropolitan Railway for the use of the G.N., Midland,

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and London Chatham & Dover Railways), a footbridge and waiting shed were added to the meagre equipment of Seven Sisters Road station. In the next year, when the Farringdon Street service was extended to Moorgate, and the directors proposed an expenditure of £1,146 on "waiting room and covering of platform," some of the shareholders began to protest!

In 1869, Hornsey Wood was acquired by the Metropolitan Board of Works to become Finsbury Park, although Holloway, Highbury, Islington; and Hoxton separated it from its namesake, whereupon the Great Northern changed the name of Seven Sisters Road station to correspond. Six years later, North London Railway trains began to run to and from Broad Street to G.N. suburban stations *via* Finsbury Park, thereby giving an alternative City service. Since those early days Finsbury Park has steadily grown in size and importance. By 1912 the station was served by 550 passenger trains daily, dealt with at 4 island platforms (numbered 1 to 8 and connected by subway) fed by 6 platform lines. Below were the electric services provided by the stations of the Great Northern & City and Piccadilly tubes, which had been opened in 1904 and 1906, respectively. A fifth island platform (numbered 9 and 10) and a seventh platform line were added after the war of 1914-19. The layout of Finsbury Park station, whereby three of the seven platform lines possess a platform face on each side, is unique in this country. During the rush hours trains often enter and leave the station three abreast and those that come to a stand on the dual platform lines form a bridge by which passengers change from one platform to another. Indeed, on the down side of the station, which possesses two of the three dual platform lines, a passenger arriving in a Potters Bar train from King's Cross on No. 5 (which is the down main platform) may sometimes pass through trains standing between platforms 4 and 3 and 3 and 2 to reach say a Gordon Hill train waiting in platform 1. Today, despite reduced wartime passenger services, 138 down and 134 up trains serve Finsbury Park, apart from the heavy main-line passenger and freight traffic passing through the station. Eventually, when the electrification scheme for the Alexandra Palace, High Barnet, and Edgware lines has been completed, Finsbury Park will possess yet another island platform, this time on the up side, east of platform 1, thus entailing renumbering of them all. Services of 7 electric trains an hour to Moorgate from High Barnet and a like number from Alexandra Palace are contemplated.

The Newfoundland Railway

IN announcing on July 24 the creation of the post of the Canadian High Commissioner to Newfoundland, Mr. Mackenzie King, Prime Minister of Canada, attracted attention to Newfoundland by referring to it as a Dominion, its status as such having been suspended in 1933 when a commission was introduced until such time as the island again became self-supporting. The only railway of importance on the island is the Newfoundland Railway, which is owned by the Government and operated under the management of the Department of Public Utilities. This railway, which has its headquarters at St. John's, operates 748 route miles of 3 ft. 6 in. gauge line and has 249 miles of yard tracks and sidings. 70 lb. and 50 lb. rails of 30 ft. length prevail. During 1940 it had in service 36 steam locomotives, and 62 passenger carriages, the latter total comprising 19 first class carriages, 20 second class carriages, 13 sleeping cars, 6 dining cars, 3 private cars, and 1 school car. Its freight equipment consisted of some 12 luggage vans, 338 box wagons, 291 flat wagons, 13 refrigerator cars (all of the non-freezing type), 20 coal wagons, 47 tip wagons, and 15 motorcar carriers. Operating figures in the past three financial years are as follow:—

Year ended	June 30, 1938	June 30, 1939	June 30, 1940
Freight originated (tons of 2,240 lb.)	567,843	504,342	449,282
Freight received from other carriers (tons of 2,240 lb.)	24,532	20,010	29,089
Freight, ton-mileage —	51,499,047	45,809,190	52,148,380
Freight, train miles	544,076	532,665	554,770
Average car loadings of leading commodities carried (tons per car) ...	12·15	12·52	13·05
Average freight rate (cents per ton-mile)	2·54	2·39	2·26
Passengers carried	183,216	146,130	160,705
Passenger miles	17,743,463	11,837,810	15,316,660
Operating revenues (railway only) ...	$2,183,601·15	$1,915,297·00	$2,080,533·68
Other revenues	$1,319,959·78	$1,195,280·05	$1,430,332·21
Operating expenses (railway) ...	$2,333,390·32	$2,262,559·36	$2,348,746·41
Other expenses	$1,243,740·33	$1,151,674·26	$1,246,393·73

At present the Newfoundland Railway is experiencing one of the best years in its history. Railway traffic has been increasing at a steady rate since Newfoundland assumed its highly important defence position. In the absence of suitable roads to haul heavy materials, the railway is handling the large tonnage of goods and construction materials being transported for the construction of bases for the United States army and navy and airport. The Canadian garrison has also provided the railway with a large volume of business. Even before the advent of U.S.A. construction and the arrival of Canadian troops, the Newfoundland Railway found conditions considerably better than for many years. Great activity in the movement of wood and paper had made operating results more satisfactory. Passenger traffic, which has benefited by the irregularity of water travel, is nearing peak levels and the movement of mails of the U.S.A. bases may provide some further revenue for the railway. Freight carried in January, 1941, both by rail and steamer, was 45,288 tons, showing an increase over the same month last year of 16,188 tons. In January, 1941, the number of passengers carried by rail and steamer was 14,491, an increase of 1,475 over the same month a year earlier. The increase in February was a little more marked; 15,925 passengers were carried by rail and steamer, against 10,579 in February, 1940, and 45,326 tons of freight were conveyed, in comparison with 34,445 tons. To facilitate oil shipment by tank car to various points along the railway, an oil company is erecting a large welded tank in the old cattle yard at St. John's. A new cattle yard is about to be built on the south side of St. John's harbour.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Late Colonel Rendell

Rendel, Palmer & Tritton,
55, Broadway,
Westminster, S.W.
August 9

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with much interest the articles on Colonel Rendell in the August 9 issue of THE RAILWAY GAZETTE. Colonel Rendel was a great friend of my father and his connection with my firm was even closer than might be gathered from your biography. When he was C.M.E. of the North Eastern State Railways in Bengal my father was posted to the E.B.R. as an Assistant Locomotive Superintendent. Shortly afterwards he was Assistant Works Manager and then Works Manager at Saidpur and Kanchrapara and he was later associated with Colonel Rendell in the design of the shallow-draught steamers and ferries on the river services.

With many others who knew of Colonel Rendell's services we in Rendels always looked on him as the "Grand Old Man of Indian Railways."

Yours sincerely,
JULIAN S. TRITTON

THE SCRAP HEAP

Soviet railway workers would normally have celebrated August 3, Railwaymen's Day, as a holiday. But they decided, reports Moscow radio, to forego the holiday and to contribute their day's earnings to the defence funds. The Government agreed, and not a single railwayman failed to report for duty.

* * *

RAILWAY OPERATED BY TWO WIDOWS

Mrs. Ida Gardner Dingler is President of the Fruitville Line—sometimes known as the Cassville & Exeter Railroad—in the Missouri Ozarks. Mrs. Bertha Ault is Secretary. The two of them own the 4·9-mile line, said to be the shortest standard-gauge railway in the U.S.A. They inherited the line from their late husbands. It is mainly a freight line. Although both are past sixty, Mrs. Dingler and Mrs. Ault have successfully operated the line since 1939.

* * *

BETTER THAN MULES?

"Midget locomotives, as easily operated as automobiles, yet able to pull trains of 15 loaded freight cars at a speed of 15 miles an hour, are being delivered to Army posts throughout the country," said a recent statement from the U.S.A. War Department. Twenty-five of the locomotives already are working for the Army. Although the general plan is to use the midgets on standard-gauge tracks, experimental tests at Fort Dix, N.J., "revealed they were adaptable to narrow gauge as well." There are many practical time-saving uses for the locomotive, according to Quartermaster Corps authorities.—*From the "Railway Age."*

* * *

"CO-ORDINATION" PROBLEMS

The receipt of a letter from a correspondent asking us to enlighten him as to the function of one charged with the duty of "co-ordinating problems"—a request which he explained arose from the caption to the picture of Mr. Gilbert S. Szlumper in our contemporary, *Shipbuilding and Shipping Record*, last week—conjured up before us a nightmare of unsolved problems. Sir Andrew Duncan had told Members of Parliament that Mr. Szlumper's new task was "the co-ordination of all transport problems by rail, sea, and canal." After the last war the multitude of comparatively small independent railways in this country each had its own problems, so it was decided to amalgamate them into four great units, the idea being, apparently, that the way to solve a small problem was to amalgamate it with a lot of other small problems, and so make one big problem. In the twenty years since the Railways Act was passed, these amalgamated railway problems have been co-ordinated and unco-ordinated, but never solved. Now, apparently, Mr. Szlumper is to amalgamate these railway problems with those of the canals and even the seven seas. Surely the resultant swelling will automatically burst, and show that the solution of the fundamental problem of the smallest unit would have kept the body politic clear of poisons, and will point the way to purity in the future.

* * *

GAUGE!

So acute are the German transport difficulties on the Eastern front that they are now understood to be transporting railway rolling stock from Spain to Russia. The Spanish gauge is the same as the Russian, while German trucks have too narrow a wheel-base to be used on Russian lines. Americans arriving here (Lisbon) after travelling across Spain saw Spanish rolling stock being hoisted at the French frontier on to narrow-gauge trucks. They were told the trucks were bound for Russia. As Spain has been desperately short of rolling stock ever since the civil war, the number of trucks she is able to lend Germany must be very small. That the Nazis should consider it worth while to bring these few trucks right across Europe testifies to the magnitude of the difficulties they are experiencing. Spain's sacrifice will increase still further her already formidable problems of internal transport, which are largely responsible for the unsatisfactory distribution of foodstuffs.—*Martin Moore, special correspondent of "The Daily Telegraph" and the "Scotsman," in a message from Lisbon dated July 25.*

[The gauge of the Spanish railways is 5 ft. 6 in., and the Russian, 5 ft. The German gauge is, of course, the standard 4 ft. 8½ in.—ED., *R.G.*]

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JOHN STUART MILL AND THE RAILWAY MANIA OF 1845

In the cloistral quiet of the John Rylands Library, that oasis of scholarly silence set in the midst of the turmoil of Manchester's streets, there can be seen a deed testifying under the hand and seal of John Stuart Mill that he was no more immune than the vast majority of his contemporaries from the railway fever which in the years 1845 and 1846 coursed through the economy of Britain only to leave it in 1847 weak and enfeebled after the country's financial temperature had suddenly slumped from dangerous heights to depressing depths of sub-normality.

This deed is the subscription contract dated June 16, 1845, for a railway "to commence at or near.....in the Parish of.....in the County of.....and to terminate at or near....." ". . . to be called by the name of the South London Suburban Railway." In the deed the proposed capital of the railway was left in as indefinite a state as its terminal points, as it was provided that "a capital not exceeding.....sterling in the first instance shall be raised in shares of £20 each," with power indeed to add to their number.

The first subscriber to this somewhat nebulous project was John Stuart Mill, of 18, Kensington Square, described as "E.I.C. Service" (East India Company Service), who contracted to take 35 shares of £20 each on account of which £700 total liability a deposit of £1 7s. 6d. a share, or £48 2s. 6d. in all, was to be paid down.

Although dozens of ruled pages of parchment had been optimistically prepared, each dotted with a column of 35 neat little wafer seals, ready for subscribers to sign, seal, and deliver the deed, in fact only 28 signatories—and that in so long a period as 3½ months—followed John Stuart Mill's lead, thereby subscribing for a total (including his quota) of £18,400, which obviously was a capital woefully inadequate for the construction of a South London Suburban Railway to commence at or near Nowhere and to terminate at or near No-place—verily a Utopian project in the strict and literal sense of the word.

Although the South London Suburban Railway appears in Tuck's "Railway Shareholders Manual" as No. 963 of the 1,118 companies provisionally registered during 1845 for railway projects, it never secured an Act of Parliament and indeed does not appear on the Board of Trade Map of Railways whose Bills were pending in the Session of 1846, so the proposed railway from No-where came to No-thing.

KENNETH BROWN

Publications Received

Heat-Treatment of Aluminium and its Alloys.—In response to an increasing demand by engineering industries, the Research & Development Department of the Northern Aluminium Co. Ltd., Banbury, Oxon, has devoted its latest bulletin to a comprehensive and up-to-date survey of the technique of heat-treatment of aluminium and its alloys. The important aspects of the theory and practice of solution and precipitation heat-treatment and annealing, particularly as applied to the higher strength alloys, are discussed and summarised, and recommendations made as to the means whereby a successfully treated product can be ensured. The equipment used in modern installations is fully described, and a section deals with the recently introduced use of refrigeration storage, or cold-treatment plant, for delaying the age-hardening of certain types of alloys as a means of achieving economy in press operation. The potentialities of this development in removing bottlenecks in aircraft production are already widely appreciated. Space is also devoted to the diagnosis of complaints and to maintenance procedure for furnaces and pyrometric equipment, while full data are given for all heat-treatment processes.

XUM

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

BRAZIL

Central Railway New Branch Line

During the last century, before the coffee planters moved to newer and more fertile zones, and prior to the construction of the São Paulo Railway from the town of that name to the port of Santos, São Sebastiao, lying somewhat to the north-east of Santos, was the most flourishing port of the State of São Paulo. Even today remains of its historic and important past exist side by side with its evident signs of decline, but with the prospect of a railway to it from Mogy das Cruzes, a new era of prosperity is promised for this once busy seaport.

Although some months have been occupied in the survey of the rugged Serra do Mar region, a suitable alignment has at last been located for the construction of an adhesion line 115 km. long despite the mountainous nature of the country; it will, however, strike the coast some 20 km. south of São Sebastiao and run along it to that port.

Other New Lines

Yet another new line is under construction between Patrocinio, on the Rêde Mineira de Viação, and Catalão, on the Estrada de Ferro de Goyaz. From the Patrocinio end platelaying has already reached Monte Carmello and in the opposite direction from Catalão it has reached Ouvidor. Work is also in hand on the bridge over the river Paranaiba which is 112 m. (367 ft.) in length.

On the Estrada de Ferro de Goyaz the building of a new branch line has been begun from Goyania to General Curaro situated between Leopoldo Bulhões and Annapolis on the main line. The alignment follows the course of the Sozinha and Jõao Leite rivers for a distance of 74 km., and constructional costs are estimated at 20,000 contos of reis, some 10,000 contos less than the previously estimated cost of a line from Goyania to Leopoldo Bulhões. On completion, the capital of the State of Goyaz, future capital of the whole of Brazil—at present isolated in the mountains except for roads invariably damaged by heavy rains—will, from Goyandira Junction southwards, have two lines of railway communication with the outer world; the first by way of the State of São Paulo *via* Araguary, Uberaba, Igarapava, S. Joaquim, Orlandia, and Ribeirão Preto, and the second through Minas Gerães *via* Patrocinio, Ibiá, Bambuhy, Garças, Lavras, Andrelandia, and Barra Mansa. Through communication by the latter route will depend, however, on the completion of the line between Monte Carmello and Ouvidor mentioned above. When both lines are finished the journey between Goyania and Rio de Janeiro will be reduced to 58 hours *via* São Paulo, and 40 hours *via* the Rêde Mineira de Viação.

COLOMBIA

The National Railways

The Administrative Council of the National Colombian Railways, at Bogotá, operates 2,184 km. (1,357 miles) of railways, mostly on the metre and 3-ft. gauges. The lines now worked by the council are the following: Barranquilla, 28 km.; Cartagena—Calamar, 105 km.; Central Northern, 386 km.; North Eastern 253 km.; Cundinamarca, 215 km.; Girardot, 368 km.; Pacific, 722 km.; and Nariño, 107 km. The council also operates the Gamarra-Ocaña Ropeway, 47 km. (29 miles). The working results of the whole system for the year 1940 were as follow:—

	$
Gross earnings	15,812,671
Working expenditure	13,947,783
Additions and betterments... ...	1,132,489
Reserves and profit	732,389

No part of the Colombian National system is electrified, but nine petrol railcars are in service for passenger traffic.

MEXICO

National Railways Administration

The Law of January 1, 1941, provided for the nomination by the Government of the General Manager of the National Railway system, and General Enrique Estrada was appointed by the President of the Republic to occupy the post. Since he took over the management, General Estrada has introduced an atmosphere of vigorous reform into the administration, and this salutary influence is already having some effect. The main question, however, is the renewal of equipment, and this may well depend on the matter of an increase in charges, which is still latent. The three delegates of the Workers' Syndicate on the Council of Administration, who resigned after the promulgation of the new Law, have since been allowed to rejoin the council.

UNITED STATES

Additional Chicago-Californian Streamliners

To meet the steadily increasing demand for accommodation on the streamliners running between Chicago and San Francisco and Chicago and Los Angeles, two new 39¾-hr. trains are being put on by the Southern Pacific, Union Pacific and the Chicago & Northwestern railroads in mid-July. They are (1) a second City of San Francisco, which, operating with the present train, will provide streamliners every three days in both directions, and (2) a new City of Los Angeles, which will provide nearly 25 per cent. additional streamliner capacity for the two trains on the C. & N.W. and U.P. run.

The new City of San Francisco will replace the present Forty-Niner which runs to a 50-hr. schedule; the new City of Los Angeles will replace the present 13-car train of that name. Both new trains will be made up of 17 cars and will carry considerably more passengers.

The two new trains will each be powered by three 2,000-h.p. diesel-electric units, or a total of 6,000 h.p. The present streamliners have a total of 5,400 h.p.

CEYLON

Chief Officers Consider Closing Lines

A decision to recommend the closing down of the Avissawella-Yatiyantota section of the Kelani Valley railway was made at a recent meeting of the board of chief officers of the railway. The question of closing down the Chilaw-Puttalam section was also considered, but in this case it was decided that the matter should be further investigated. These two sections have long been known as the least paying lines, and it was found, particularly in the case of the Avissawella-Yatiyantota section, that the maintenance of it was a drain on the resources of the railway; it is about 11 miles in length, and is of narrow gauge. The Chilaw-Puttalam section is broad gauge.

The measures adopted from time to time to attract more traffic to these sections, and also the curtailment of the services and the staffs at the stations with a view to reducing the maintenance charges, have not produced the desired results because of the keen road motor competition. Both lines run parallel to the highroad.

Easter Holiday Traffic

This has been one of the best years in recent times both from the point of view of passengers and of parcels and goods traffic for the season. The peak for any single day at Colombo Fort station, where the bookings were heaviest in the period between April 6 and April 13, was reached on April 11 (Good Friday), when nearly Rs.20,000 was earned from passengers alone. At that station parcels traffic also assumed large proportions and on some days 400 packages of varying size and value were handled by the staff working night and day.

The popularity earned for parcels traffic on the railway is still maintained and a considerable proportion of this class of traffic, which had been lost to the railway for many years past, is now being restored. This is largely attributed to the restrictions now enforced on the conveyance of parcels of more than a specified size and weight on the roofs of motor buses.

ELECTRIC TRACTION SECTION

Polarity and Contact Line Wear

AMONG the range of electric traction subjects one of the things least discussed is the polarities of the conductor system and the locomotive or motor-coach, for practice long ago settled down to positive polarity for the overhead line and negative for the electric tractor. But there have been odd examples of the opposite method, and the effect of this on the wear on the contact line of a 1,500-volt d.c. line in Spain is discussed on the two following pages. Every electrical engineer may not agree with all of the author's conclusions, and certainly not every one has been in a position to make direct observations on adjacent railways. One of the author's statements which may seem open to question is his explanation of why intake cable changes at small h.t. switches were necessary. A more probable reason than he gives is that the blow-out coils of such switches will be reversed, and any arc produced when opening will consequently be blown in the wrong direction. The author also implies that all arcs tend to terminate at a fixed point on the negative, and further infers that they start freely from any point of the positive pole, advancing this as a reason for the easier suppression of an arc involving the negative. Is there any real justification for this view? That negative line polarity causes deterioration of cables and pipes near the line was confirmed over 40 years ago, and an interesting extract from *Cassier's Magazine* in 1899 reads: "It was formerly the practice to connect the positive pole of the station dynamo to earth, and the negative pole to trolley wire, with the result that the portion of the underground system remote from the power house, covering a widespread territory, was rendered electro-positive and the danger areas extended to the maximum limits, so the first step towards protection was taken by reversing the generator poles, rendering all the territory remote from the generators electro-negative and concentrating the electro-positive points in the immediate vicinity of the station." From this it seems clear that on at least some of the early lines it was the original practice to use negative line polarity.

Unadopted Electrification Schemes

WHENEVER a glance is cast ahead to what may be the technical operation of British railways after the war, one comes hard up against the fact that considerably more traffic will be operated electrically than is the case now—and rightly so. Leaving out of consideration most promising schemes for suburban conversion round several large cities, and extensions in the London area, one or two main-line electrification schemes which have been proposed during the last 25 years, but never proceeded with, may be briefly reviewed. First, there is the old North Eastern Railway's proposal to electrify on the 1,500-volt d.c. system its 80-mile York—Newcastle main line, a scheme strongly supported by the then Chief Mechanical Engineer of the N.E.R., Sir Vincent Raven, under whose direction a trial 2-Co-2 express locomotive was actually built and tested on the Shildon—Newport line. The whole scheme had its birth in the days of great prosperity on the N.E.R., but in the years after the last war, when the scheme was really brought to the front, capital was hard to get, and eventually increased traffic capacity was gained over a period of 16 or 17 years by limited quadrupling and improved signalling. Whether the London—Southend line of the L.M.S.R. could ever be called a "main" line is a moot point, but it seems to have as many claims in that direction as the Southern's London—Brighton route. During the last war the old Midland Railway is understood to have been charged by Parliament to examine the electrification of the Southend line as a measure of post-war reconstruction. However, the project came to nought, and similar investigations since have had the same result. Nevertheless, such a scheme seems to have distinct possibilities, appreciated particularly by those who are season-ticket holders and any who have witnessed holiday traffic on this or the rival L.N.E.R. route, electrification of which was described by the late Sir Philip Dawson as "a potential gold mine."

Proposals about the same time to electrify the S.E.C.R. lines to Dover and the Kent Coast, and including the company's London suburban lines, have been mentioned in past issues of the *Electric Traction Supplement*, as has also the 1938 investigation into the electrification of the Taunton—Penzance line of the Great Western Railway, which showed that the financial return on the capital would not be great enough to justify conversion of a line which had few characteristics really classing it as an urgent electrification scheme. Another main-line scheme put back *sine die* is the Sevenoaks—Tonbridge—Hastings route of the Southern, which formed part of the last big electrification proposals of that company. Rising material prices, limited loading gauge preventing interchangeability of stock and leading to difficulty in locating the conductor system, and station difficulties at the London end, all contributed to the shelving of electrification. Finally, there are the two investigations—Crewe—Carlisle on the L.M.S.R. and the ex-Great Northern main line of the L.N.E.R.—made on behalf of the Weir Committee, but which differ from the preceding schemes in in that they were not made strictly from the railway point of view, but were considered equally as part of a general industrial electrification to give greater impetus towards the success of the grid. In the years after the present war it is not unlikely that electrification in this country will be turned first to several of the seven proposals outlined above, for valuable data are already in existence as to the work involved, and on none of the lines concerned had any decrease in traffic been experienced up to the outbreak of war.

Electric Locomotive User

THE availability of electric locomotives has always been one of the principal advantages claimed, not only for the locomotives themselves but for electric traction schemes as a whole. They have an inherent reliability because of the nature of the equipment, but another important factor which must contribute substantially to the hours available for service is the comparatively short time required for regular daily and weekly inspections. As a rule, the daily inspections need be of so slight a degree that they can be carried out during the lie-over at a terminal, or at a long stop *en route*, and although it is difficult, even if possible, to lay down any general rules, it is probable that an hour a day is quite sufficient allowance for the inspection of electric locomotives engaged in two-shift duty. Moreover, few special facilities are required, and it is not always necessary to go to a depot or locate the locomotive over a pit. Where inspection and adjustment of this type are practised, the locomotive normally is given a more comprehensive inspection, along with renewals and any necessary maintenance work, about once a month, the exact period varying with the mileage and duties. Such visits to the depot should not involve a loss of service exceeding one day in the ordinary course. Indeed, on lines such as the Pennsylvania, where the motive power is well standardised and the equipment design based on long experience, one or two eight-hour shifts are all that are required for the monthly maintenance work. Heavy repairs on the Pennsylvania at the moment are undertaken on the basis of three-year intervals for the GG-1 passenger locomotives (2-Co + Co-2 type) and a five-year basis for the freight locomotives of class P5A (2-Co-2 type), yet the work is so well organised that the locomotives are out of traffic for only a couple of weeks or so for the heavy overhaul.

XUM

The Influence of Polarity on the Wear of Overhead Lines

A discussion of some results obtained in d.c. electrified railways in Spain

*By JOSÉ A. GUERRICABEITIA, Mechanical Engineer and Traffic Superintendent, Vascongadas Railways**

THE wear of copper on commutators being greater or less according to the direction in which the current is flowing, it will be appreciated that the collection of current by the contact bows or pantographs of d.c. electric locomotives and motor-coaches may produce similar phenomena, since in that case, too, the copper of the contact wire is positive with respect to the current collector when the line polarity is positive; there must therefore be a transference of copper from the wire to the collectors and greater wear on the former than when its polarity is negative; in the latter case any transference of material would be from the current collectors to the wire.

Contact Wire Wear

This phenomenon has received practical confirmation by comparing the wear of contact wires on the electrified lines of the Bilbao-Portugalete and Vascongadas Railways, in which the line polarity is positive, with that on the Bilbao-Las Arenas-Plencia Railway, where the polarity is negative, being energised by rectifiers of an early type in which the positive, that is to say the steel tank, is not insulated from earth.

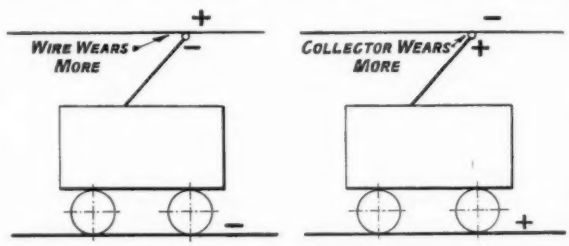
It was found that on the Vascongadas Railways, after working for ten years with positive polarity, an average wear had been recorded of 1·4 mm. for 110,000 passages of the contact maker, or $\frac{1{\cdot}4}{1{\cdot}1} = 1{\cdot}27$ mm. per 100,000. On the Bilbao-Portugalete electric railway, also with positive polarity, after two years of electric working, the results gave a wear of 0·5 mm. for 43,500 passages of the contact strip, or 1·15 mm. per 100,000. This lesser wear was obtained in spite of heavier currents being collected, as the motor-coaches are more powerful than the Vascongadas units, although the locomotives are the same on both lines, but this has been explained by better construction and maintenance of the overhead line; in any case, the wear is of the same order of value on both railways.

On the other hand, on the Bilbao-Las Arenas & Plencia Railway, after eight years of electric traction, an average wear of 0·3 mm. for 385,000 passages of the current collector was obtained, equivalent to 0·078 mm. per 100,000. In this case, however, it is the practice to run with two pantographs raised, thus halving the amount of current collected by each one, but even supposing that for this reason the wear were half as much per 100,000 passages, the wear with negative polarity would be 0·156 mm. and therefore, compared with the average on the lines with positive polarity, would be $\frac{1{\cdot}27}{0{\cdot}156}$ or 7·75 times less. There is a factor of reduction in this result owing to the fact that on the Bilbao-Las Arenas line motor-coaches alone are run, of about the same power as those of the Vascongadas Railways, whereas on the Vascongadas a third of the service is performed by locomotives of approximately double the power; nevertheless, these results do prove, without doubt, that with negative line polarity the wear is much less than with positive. On all three railways the pantograph contact strips are of copper and of equal hardness.

To confirm this view that there is less wear with negative line polarity the proceedings of an international electrical congress at The Hague in 1932 may be cited, from the paper presented on the 6th question, "Trolleybus Operation," by M. Ch. Harmel, in which, under the title of "Operation of Trolley Vehicles and the Maintenance of Overhead Wires," it says:—

"An American and an English firm report that the wear on the collector shoes and trolley collector wheels is more rapid when running on the negative wire than when running on the positive one. To this experience we add our own on the Liége tramway system, where we found the wear on trolley wires to be much more rapid on up-grade lines than on those on the level, the minimum wear being found on down-grade lines, where only energy for lighting was being taken. It may be deduced that the direction of current has an influence on the wear of both the current-collecting equipment and the trolley wires. Wear will always be greater on whatever is positive, with the result that a positive trolley wire must wear more rapidly than a negative, while a collector shoe or wheel running on a positive trolley wire must wear less rapidly than one running on a negative wire."

The values previously indicated prove that some wear is nevertheless produced on wires of negative polarity. Notwithstanding the absence of deposit of copper from the contact wire on the current collector, there must, of course, be some wear due to friction between the contact strip and the wire. This wear can admittedly be reduced in the case of positive contact wires by the known methods for ensuring more perfect contact, such as lubricating both contact strips and wire with a mixture of graphite and grease, and also by using carbon contact strips. These arrangements appear to have considerable influence in doing away with the imperceptible sparks which cause waste of power, as has been proved by the reduction in the interference in wireless receiving apparatus where carbon strips have been adopted on neighbouring tramways and railways. The wear produced by the action of the current may also be diminished by increasing the tension in the pantographs, if the line construction allows of this, but the wear produced by friction will then be increased.



Simple diagram showing principle of wear in relation to positive and negative overhead contact lines

Disadvantages of Reversing the Line Polarity

To obtain the advantage of reduced wear resulting from negative line polarity, and to confirm the difference in wear for equal conditions of current collection, a trial was made on the Vascongadas Railways, the polarity being reversed on February 10, 1936, but 16 days later positive line polarity had to be restored because when the first rain-storm fell numerous short circuits occurred at the insulators, rendering working with negative polarity impossible. It must be noted, however, that there were many cracked insulators, some as a consequence of defective mounting, in which the short circuits occurred.

Although there seems to be no obvious reason to explain the necessity for better insulation on changing the polarity, it is believed that it may be attributed to an electrolytic action produced by the currents passing to earth through

* In a paper on the subject before the Asociación de Ingenieros del I.C.A.I., Madrid

the defective insulators. Actually, when the line is positive the small currents leaking to earth cause oxygen to accumulate on the positive pole, forming considerable layers of oxides; on the other hand, with a negative line hydrogen is deposited thereon, separating without reaction with the iron. On reversing the line polarity from positive to negative, the hydrogen thus forms where the oxides of iron were forming previously, combining according to the following chemical reaction:

$$\underset{\text{(Oxide of Iron)}}{Fe_2O_3} + \underset{\text{(Hydrogen)}}{3H_2} = \underset{\text{(Iron)}}{Fe_2} + \underset{\text{(Water)}}{3H_2O}$$

This frees the iron, which, on being carried away by the rainwater, forms a conducting medium, giving rise to the short circuits.

Insulation and Switches

In the case of the Vascongadas Railways, no defects of insulation in the cabling and wiring have occurred, either in the substations or on the locomotives or motor-coaches, and therefore it has been impossible to confirm certain reports of old installations in which there have been failures in the insulation on reversing the polarity. As a matter of fact, it appears that this disadvantage does not occur when the polarity is negative from the beginning, nor is it believed that it will occur given good insulation in the line and in the equipment generally, on reversing the polarity. Tests, however, confirmed the necessity of changing the intake cables of some small high-tension switches which were fitted with blow-out coils, such as those in the heating circuits, in which the makers have marked the terminals with the signs + and −. If these changes of cables had not been made many difficulties would have been encountered, because these switches cannot interrupt the arc which jumps between the points of contact when the switch is opened. The reason for this phenomenon is that the moving contact-finger of the switch must always be the positive, so that the arc may be displaced easily, favoured by the movement of the finger, which does not happen when the moving contact-finger is negative, because the arc burns from a fixed point on the negative pole.

It is easily understood that an arc jumping to a fixed point in the negative pole may be the cause of bad current collection with negative line polarity, for at hard points the arc which forms between the negative wire and the contact strip burns from a fixed point and lengthens as the strip moves away, resulting in easy extinction of the arc, which is thus obtained much sooner than when the polarity is positive, since then the arc can run the length of the wire following the pantograph. This explains why, on the Bilbao-Las Arenas-Plencia Railway, it is necessary to use two pantographs, notwithstanding the good construction and maintenance of the line. This is a disadvantage, as in case of damage to the line both pantographs suffer if the two are raised and there is therefore no second pantograph in reserve, as there is when only one of a pair is used.

Modifications in the Return Circuit

On reversing the polarity an important modification is produced in the return circuit, of which it is necessary to be forewarned because of the serious consequences that it may bring in neighbouring underground pipes, wires, etc. When the contact wire is positive the return circuit is formed by the rail and by any pipes or underground armoured cables running parallel to the track.

In the zone alongside the locomotive or motor-coach the rail acts as the anode and any armoured sheathing or piping as the cathode. Therefore the oxygen produced by electrolysis in the humidity of the soil goes to the anode, that is, the rail, and the hydrogen to the cathode (the cable or piping): the underground mains are thus not in danger of deterioration but, on the other hand, oxidation may occur in the foot of the rails. This zone, called negative, shifts along the track with the movement of the train or locomotive and therefore its consequences are not vital, no area being exposed for any length of time to the effects of the electrolysis. The only thing to be feared, and this has been confirmed, is the oxidisation of the rails in tunnels, where the greater humidity produces better contact with earth than along the general run, and in consequence the currents continuously leak away at these spots, even when the locomotive or motor-coach is some distance away.

In the fixed positive zone near the substation parasitic currents pass constantly from any piping or cable towards the rail and thence to the negative bar of the substation. Oxygen is consequently deposited constantly on the cable or piping, producing rapid oxidation and deterioration. Similar positive zones are also produced at points where cables or pipes leave the neighbourhood of the track.

Drainage

To avoid the effect of these currents, the remedy most usually employed is that known as "drainage," which consists of cross-bonding the rails to the pipes and cables in the positive zones by means of conductors of suitable section. Other methods exist, such as the provision of insulated negative feeders to ensure a good return, but this is very costly if it is to be efficacious. Insulated joints have also been inserted in cables and pipes but, besides being troublesome, they present difficulties with certain voltages if the number of insulated joints is not sufficiently great to reduce to a sufficiently low value the voltage drop at each one. Positive and negative zones may then be created on the different sides of it, in which case serious corrosion is produced in its proximity.

Positive and Negative Zones

On reversing the line polarity the positive zones for the cables and pipelines shift along the track with the movement of the locomotives or motor-coaches, and the most dangerous points are those where the track makes good contact with earth, either in consequence of being buried, as at level crossings, or of passing through humid zones, and in the tunnels. Of course, these zones are less dangerous for cables and underground metallic mains than those which are produced at the substations when the line polarity is positive, seeing that in this latter case the current that returns through earth between such cables and the negative, opposite the substation, is the sum of those that circulate to one and the other side of the substation, and because this return current is continuous while there are trains running, on either side. On the other hand, with negative line polarity, the parasitic current is that corresponding to one motor vehicle, and moreover it is not continuous, not being localised at one point alone but moving along the track. From what has been said it may also be deduced that, in the same way as with positive line polarity, dangerous zones—in this case, dangerous to the rails—are localised as a rule opposite the substations; on reversing the polarity, therefore, it is necessary to revise carefully the return circuit, in order to limit the positive zones along pipelines and cables.

Regulations

These effects of electrolysis will be limited to a reasonable value if the return circuit is in the condition required by the different regulations. In the regulations laid down by the International Consulting Committee on Long-Distance Telephones, in those in force in Switzerland, and in the proposed new regulations for electric installations in Spain, of August 10, 1931, it is laid down that the mean difference of potential between the rails and the pipes and metallic covering of cables may not be more than 0·8 volt. This rule would be efficacious if the resistance of the earth were equal at all points, seeing that the prejudicial effects are produced by the current density. Really considerable differences of potential between rail and cables may therefore occur with high earth resistance, and consequently with small amperages that do not produce prejudicial electrolytic effects; conversely, it may happen that small differences of potential originate considerable destruction, because the resistance may be low. For this reason the rule laid down in the German regulations is much more practical, as it prescribes as dangerous the mean density of 0·75 milli. amp. per dm^2. This rule has, however, the disadvantage that to measure this current density is much more difficult than it is to determine the difference of potential between rail and contact wire.

XUM

The Sorocabana Electrification

QUITE possibly the coffee you drank at breakfast this morning was hauled from the interior of Brazil to the sea coast on a railroad of only 39-in. gauge, and behind locomotives burning wood from eucalyptus trees. This is the Sorocabana Railway, which serves a rich agricultural region in the State of São Paulo. For the most part the company has literally grown its own fuel, but at a rising cost; due to the scarcity of other fuels, coal must be shipped to Brazil by boat. This has led to the forthcoming electrification of the double-track stretch of this railway between São Paulo and Santo Antonio, a distance of 140 km., or about 87 miles.

The steam locomotives are to be replaced by a score of 3,000-volt, direct-current locomotives. Each locomotive will have six motors delivering an aggregate of 2,225 h.p., which is high for locomotives of such narrow gauge. It would have been impossible only a few years ago to build so compact a motor. On the down grades, which are 2 per cent. in some places, the locomotive will regenerate power and return it to the catenary. As trains are operated on close headways, practically all regenerated power can be used for propulsion purposes. However, when there is an excess of regenerative power, it will be absorbed by resistors at each substation. The excess in regenerative power is too small to warrant the expenditure for apparatus to return it to the primary power system. Three 6,000-kW substations with mercury-arc rectifiers will supply power to the electrification.

As the locomotives will be operated interchangeably in either freight or passenger service, the control must be sufficiently flexible to provide economical running notches over a wide range of speed. Thus the motors are to be provided with three field steps, *viz.* full field and two shunted fields. Also, the control is arranged for six motors in series, two sets of three in parallel, and three sets of two in parallel. These combinations together with the field shunting will give nine economical running notches from approximately one third to full speed.—*Westinghouse Engineering Progress*, 1940.

[Further particulars of the Sorocabana electrification will be found in THE RAILWAY GAZETTE for October 4 and October 18, 1940, and some notes on the preliminary studies in the *Electric Railway Traction Supplement* for February 2 and June 21, 1940.—ED.]

A tube train in an unusual setting. One of the new Waterloo & City five-car sets on a test run last year between London and Brighton, Southern Railway

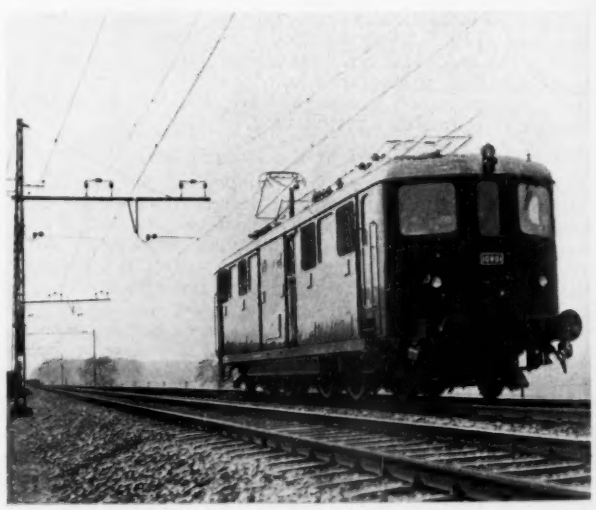
Notes and News

Swedish Electrification.—According to statistics just issued by Reuters Trade Service, 2,421 route miles of the Swedish State Railways had been electrified by January, 1941, and although this length formed approximately 40 per cent. of the total route mileage of 6,050, the traffic handled electrically amounted to 90 per cent. of the total. Of the private lines, only 375 route miles out of a total of 4,320 were electrically worked.

Madrid-Avila-Segovia Electrification.—The electrification of the line leading north out of Madrid, work on which was entirely suspended during the civil war, is now being seriously delayed for lack of materials. Large quantities of construction material acquired prior to 1936 were appropriated or destroyed during the civil war, such as the copper for the overhead catenary system, of which there is actually a shortage of 1,500 tons. Difficulty is also being experienced in obtaining delivery of the electrical equipment for the locomotives, ordered from the firms of Brown Boveri, Oerlikon, and Sècheron.

Japanese Electric Locomotives.—The passenger locomotive mentioned in the Electric Traction Section of the June 27 issue has been developed further. The 2-Co + Co-2 class EF56 locomotives have had the motor power on the one-hour rating increased to 2,145 h.p., although the weight increase is only one *tonne* to 110 *tonnes*; the new classification is EF52. Further batches of this type and of the 1-Co + Co-1 class EF11 freight locomotive mentioned in the June 27 issue have been built by the Hitachi Company, but the freight locomotive has been reclassified as EF10 because of sundry changes in design, such as the one-piece cast steel truck frames.

Pennsylvania Electric Figures.—According to Mr. H. C. Griffith, Electrical Engineer, the Pennsylvania Railroad has 675 route miles (2,195 track miles) of 11-kV. 25-cycle single-phase electrified line, including that portion of the whole system which has the densest traffic. Approximate figures for the year 1940 were 125,000,000 car miles in passenger service hauled by electric locomotives and 15,000,000 car miles by multiple-unit trains. In freight service the electric locomotive mileage was 7,300,000, with a corresponding trailing ton-mileage of 15,000 million (U.S. tons). The locomotives available for this traffic in 1940 were made up of 118 passenger and 93 freight, of which 200 are of either the GG-1 (2-Co-2) or P5A (2-Co-2) classes. These locomotives have been fully described in the September 18, 1936, and November 12, 1937, issues of the *Electric Traction Supplement* and the Pennyslvania electrified system itself in the *Electric Traction Supplement* for March 29 and May 24, 1940.



One of the new Swiss Federal 6,000 h.p. main-line locomotives described in our issue of June 27, 1941. These units are equivalent to one half of the 12,000 h.p. Gotthard locomotive completed in 1938

MODELS FOR TRAINING RAILWAY STAFF

A simple and inexpensive model has been provided for training schools on the Bombay, Baroda & Central India Railway and has been found both handy to use and effective

By H. C. TOWERS,

Signal Engineer, Metre-Gauge System, B.B. & C.I.R.

MANY railways in various parts of the world have opened training schools and staff colleges, where instruction is given by means of lectures, diagrams, films, lantern slides, and demonstration and practice with models and with actual equipment. Typical examples are the signal schools of the London Passenger Transport Board and of the British main-line railways. For efficient railway operation, each member of the staff requires to be thoroughly trained in his duties and preferably also in the duties of the next grade above. Particular attention should be paid to the rules and regulations for dealing with emergencies; staff will assimilate this knowledge more readily by practical demonstration with models than by listening to rules, sometimes couched in varying and ambiguous phraseology. A well-equipped training school is, however, expensive, and, to run one well, permanent instructors must be employed.

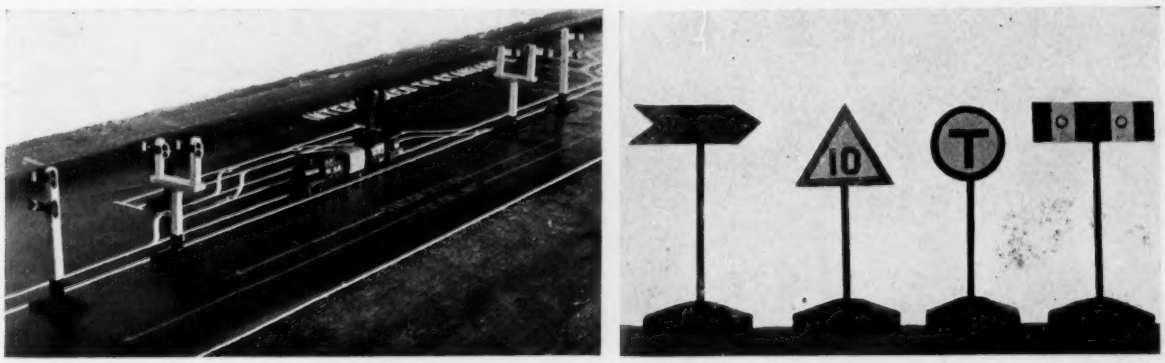
Training schools exist on the B.B. & C.I.R. at Parel and Bulsar, on the broad-gauge system, and at Ajmer, the metre-gauge headquarters, mainly for instruction in the operation of block instruments and Morse telegraph working. The Ajmer school contains a number of dummy keys, working keys and sounders, and two Tyer No. 7 type tablet instruments. The course takes from 3 to 5 months, depending on the individual, the efficiency reached in Morse signalling being 25 and 16 words a minute. The usual strength of the class is from 45 to 65 pupils.

Model Railway Provided

Lately an attempt has been made to educate the men in other branches of signalling and the rules pertaining thereto. A spare room was provided with framed station diagrams, showing the various types of signalling in use on the metre-gauge system, caution order books, line clear tickets, etc. An enthusiast presented a small model railway with two typical single-line stations, having their signals correctly operated from platform lever frames, properly interlocked. One station has the outermost points operated from a ground frame interlocked with the station signals, the other is uninterlocked, using positive locks only.* Loading gauges, scotch blocks, level crossings, etc., are provided. Although from a technical point of view the model is defective in parts, much can be taught with its aid.

Advantages of Model

Financial and other difficulties in constructing a perfect working model led the author to produce another kind having the advantage of cheapness, simplicity, and portability. The "track" in this case consists of lines painted on black oilcloth. Four or five station yards, of typical single-line design, are given, the distance between stations being about 5 ft. Miniature signals, with arms capable of being operated, outers, homes, starters, combined outers and warners, shunts, point indicators, etc., can be stood alongside the painted track in accordance with Indian signalling and interlocking standards. The extent of the block section, station sections and station limits is clearly indicated by arrows in different coloured paint. Miniature locomotives, trucks, brake vans, carriages, etc., can be pushed about as required, the whole being kept in a small fitted box, together with a diagram illustrating the various types of signalling installations in service. Various situations and emergencies, with explanations of the working rules, and of the general and subsidiary rules book, etc., can be easily demonstrated to students by the instructor with this model.



Left: View of station with miniature train. Right: Engineering signals showing (left to right) caution indicator (black and yellow); speed indicator; terminating indicator; and stop indicator (red and white)

Engineering Department Model

Another model of similar design is used in the Engineering Department for working out the positions of signals for temporary speed restrictions and for dead stops, such as would be imposed for repairs to bridges, culverts, etc. The signals are positioned according to standard orders and where these encroach on interlocked territory certain working signals have to be put out of use. This model can be used to illustrate such situations, and is found of advantage in sub-permanent way inspectors' examinations. The illustrations which accompany this article show the construction and manner in which the arrangements above described are used.

* See Mr. H. C. Towers's description of the signalling on the B.B. & C.I.R. (metre-gauge) in THE RAILWAY GAZETTE for September 29, 1939, page 430, and October 6, 1939, page 456

BREACHES ON THE LEOPOLDINA RAILWAY, BRAZIL, 1940—41

The Serraria line in Minas Geraes was seriously breached during last rainy season, and these illustrations show the methods by which repairs were effected

Above: (left) temporary sleeper crib bridge thrown across breach; (right) track suspended across breach, pipe culvert laid in position for new fill

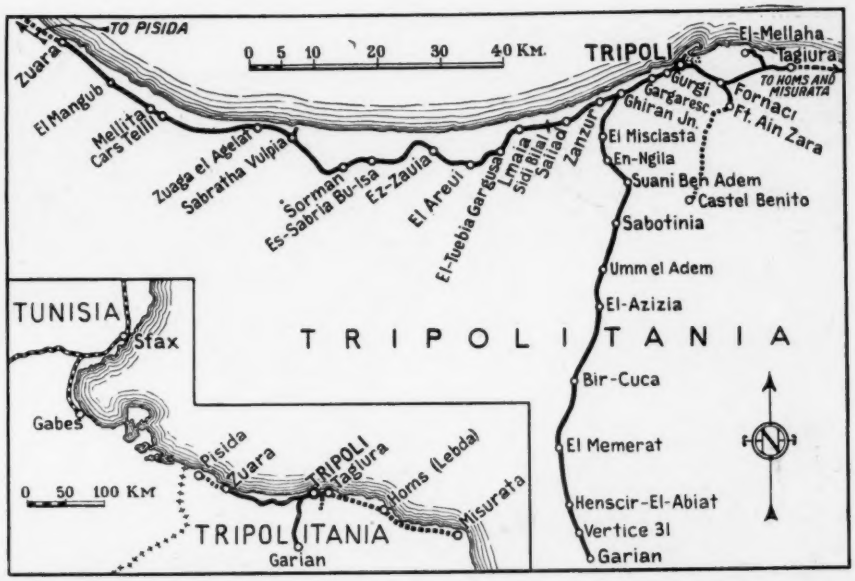
Left: New fill being tipped from low-sided trucks

Right: Fill nearing completion, embankment being widened to full width

THE RAILWAYS OF TRIPOLI

A brief description of the three Italian-built lines radiating from Tripoli, their equipment and proposed extensions

ON September 26, 1911, the Italian Government addressed an ultimatum to Turkey requiring Turkish consent to Italian military occupation of the Turkish territory of Tripoli and Cyrenaica in North Africa—now the Italian colony of Libya—for the purpose of putting an end to "the state of disorder and neglect" alleged to prevail there. War resulted, and the Italians, possessing command of the sea, had no difficulty in taking the ports of the Libyan coast, but inland they were resisted with guerrilla tactics by the Arab inhabitants. The Italo-Turkish war was brought to an end by a treaty signed at Lausanne in October, 1912. During the campaign short narrow-gauge railways from Tripoli and Benghazi were built for military purposes, their construction by Italian army engineers beginning soon after the Italian occupation of Libya. In 1913 the Italian State Railways assumed control, but turned these railways over to the Colonial Government in 1922. Actually, Tripolitania and Cyrenaica, the two Libyan provinces, have been administered as separate units since 1919.



Sketch map of the Tripolitanian railway system, and (inset) its position relative to Tunisia

The Tripolitanian System

The system centred upon Tripoli has a length of 270 km. (168 miles) and is of 95-cm. (3 ft. 1⅜ in.) gauge. One line runs westwards along the Mediterranean coast to Zuara, a distance of 118 km. (73 miles), and is single track throughout. From Ghiran junction, 13 km. out of Tripoli along this line, a branch strikes southwards to Garian, 97 km. (60 miles) from Tripoli (84 km. from Ghiran); it also is a single line of the same gauge. A third line runs eastwards from Tripoli to Tagiura, 20 km. (12½ miles), and is also single track and of 95-cm. gauge. Two short 95-cm. branches to Fort Ain Zara and El Mellaha take off this line at Fornaci (km. 9) and near km. 17, respectively. Other short branches of this gauge serve Tripoli docks (2 km.), and El Ghiran quarries; the latter runs into Gagaresc station, 7 km. along the Zuara line. There is also a 14-km. 60-cm. military line serving the defences of Tripoli and another 3½ km. long connecting Homs (Lebda) with the hills of Lebda.

Two stations serve Tripoli, Centrale,* and Riccardo. The former has a masonry station building in oriental style, a marshalling yard, locomotive and carriage sheds, and repair shops. Riccardo, 2 km. eastwards from Centrale, is nearer the heart of the city of Tripoli

The Zuara line runs through semi-desert country, with oases containing palm, olive, eucalyptus, and fruit trees occurring at frequent intervals. Gradients are negligible, and the pre-war passenger service consisted of (*a*) one fast first and second class diesel railcar each way daily except Wednesdays, covering the 118 km. in 2½ hr., and (*b*) one steam-hauled mixed train each way on certain days taking anything from 3 to 7 hr. for the journey. The railcars were introduced in 1936, and, it is understood, all passenger services in Tripolitania were intended to be diesel-operated eventually.

* Reported to have been destroyed by R.A.F. bombers on August 11

The line to Garian was worked with one train each way daily, taking 4½ hr., but there was in addition a "light train" each way on Mondays, covering the 97 km. in 3¾ hr. A mixed train was also run occasionally and took 4 to 5 hr. In the initial 62 km. the ruling gradient is 1 in 50, but as 30 min. were allowed for the final 8 km. into Garian the gradients here are probably steeper. This final section from Vertice 31 to the terminus was only recently opened. The Garian line as a whole traverses the bare mass of the Gebel plateau and is sand ballasted.

The third (eastward) line to Tagiura runs through country similar to that between Tripoli and Zuara, and there are only negligible gradients. Two mixed trains were run each way on Tuesdays only, and took from 40 min. to 1¼ hr. for the 12½ miles. There is no passenger traffic over the Fort Ain Zara branch.

Rolling Stock, Water Supplies, and Traffic

For working these three lines the following locomotives and rolling stock were centred upon Tripoli in 1938:—

- 15 eight-coupled tank engines.
- 2 diesel 48-seater railcars, capable of 90 km.p.h. maximum speeds.
- 17 bogie coaches.
- 151 goods vehicles.
- 22 tank wagons.

Tripoli has a good water supply, 2,000,000 gal. being electrically pumped from wells at Porta Fornaci daily. At other stations there are usually wells, as they are in oases, and the water is raised with wind pumps.

The principal traffic carried is fruit for export, and stone and chalk from quarries to the towns.

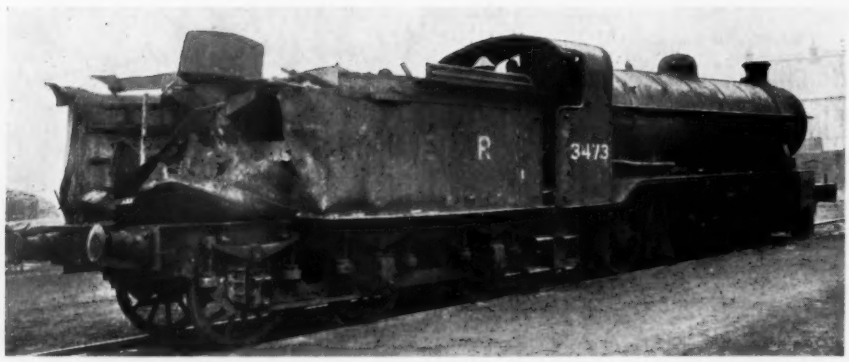
Proposed Future Extensions

In addition to the open lines already mentioned, there are three extensions projected: (1) from Zuara to Pisida, a further 40 km. westwards along the coast; (2) Fort Ain Zara to Castel Benito; and (3) Tagiura to Homs (Lebda), Misurata, and Bu Sceifa; (2) and (3) together total 237 km.

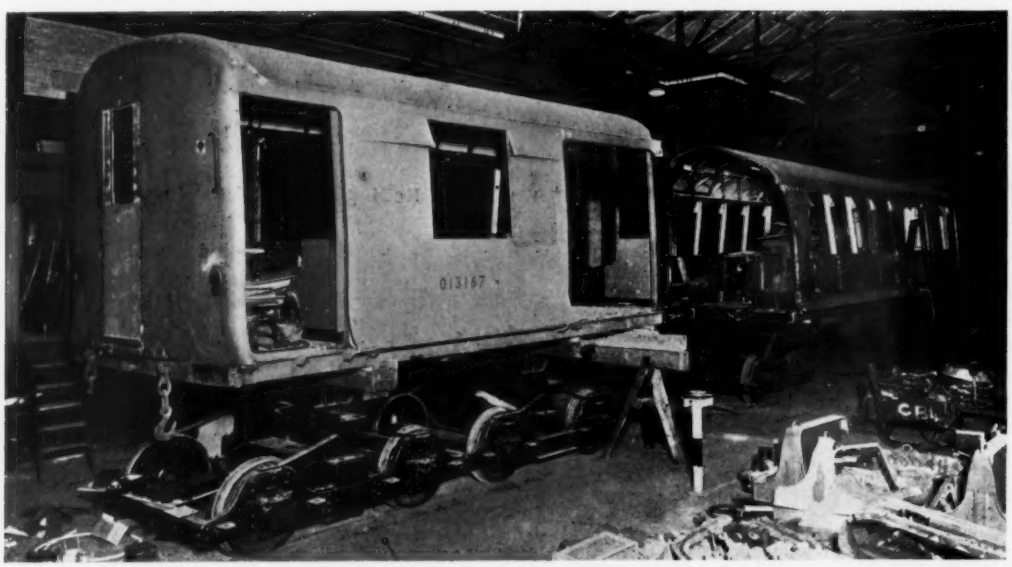
XUM

British Railways and the War—81

L.N.E.R. locomotives have not entirley escaped air raid damage. Right and below: Two heavy freight engines damaged in September, 1940



These locomotives, both of Gresley's early 2-8-0 type with two cylinders (Class "O1," L.N.E.R.), were back in service within a few weeks

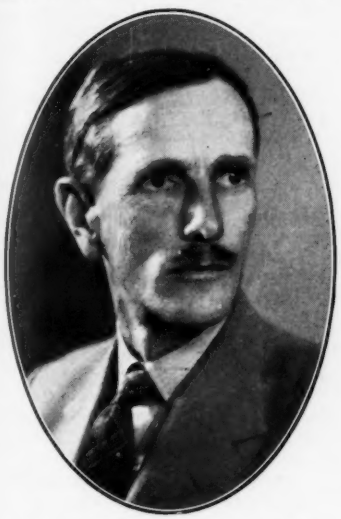


Two portions of different underground railway cars of London Transport that were partly destroyed by bombs. The damaged portions have been cut away and the undamaged parts are being joined to make a new car

RAILWAY NEWS SECTION

PERSONAL

Mr. R. O. C. Thomson, M.C., who, as announced in THE RAILWAY GAZETTE of January 10 last (page 46), was awarded the O.B.E. in the New Year Honours list, was born on December 11, 1892, and educated at Bedales and the City & Guilds of London, Central Technical College, South Kensington (London University). He served from beginning to end of the 1914-19 war, was three times mentioned in despatches was once wounded, and was awarded the Military Cross. In October, 1919, he was appointed by the Secretary of State for India to be an Assistant Engineer on the State Railways, since when he has enjoyed an almost unique service of varied construction experience on the building of new railways, including tunnelling and big bridges, and on open-line major works. Mr. Thomson was first employed on the famous Khyber railway construction, and then took charge of the Narowal Connections constructions, which included the building of the big bridge over the Ravi river. Subsequently he was placed in charge of the £600,000 Quetta reconstruction works necessitated by the devastating earthquake of 1935. It was primarily for his efficient and resourceful handling of this job—in which he effected a saving of £93,000 on the estimates by sound engineering and improved designs—that he was awarded the O.B.E. Always a keen officer in the Auxiliary Force he has been awarded the A.F. Efficiency Decoration, and at Quetta has raised and trained, and at present commands, the Technical Branch of the Civic Guard. An expert on all forms of construction works, Mr. Thomson, who is an Associate Member of the Institution of Civil Engineers, has contributed notable articles to THE RAILWAY GAZETTE such as that of August 2, 1940, describing and entitled the Earthquake Reconstruction in India—with its important anti-seismic information—and construction works on the North-West Frontier. He is also an outstanding writer upon non-technical subjects in Indian publications, and has had articles accepted by and published in *Blackwoods Magazine*.



Mr. R. O. C. Thomson, M.C.

Awarded the O.B.E. for Quetta Reconstruction, and other important engineering works

Mr. E. W. Rostern

Appointed Assistant Superintendent, Southern Area, (Western Section), L.N.E.R.

Mr. W. H Telfer

Appointed Operating Assistant to the Manager, Cheshire Lines Committee

Mr. E. W. Rostern, who, as recorded in our June 27 issue, has been appointed Assistant Superintendent, Southern Area (Western Section), L.N.E.R., was educated at Aldenham School and completed his studies at Tours and Düsseldorf. He joined the Great Central Railway in January, 1910, and was selected for special training under that company's higher grade scheme. During the last war he served in France with the Railway Operating Division, holding in 1917 the position of Liaison Officer to the French Commission de Reseau du Nord. After the Armistice he was in command of the Railway Operating Company stationed at Cologne, and was on the staff of the Inter-Allied Railway Commission from March until July, 1919. Mr. Rostern held the rank of Major, R.E., was awarded the Military Cross and the French Croix de Guerre, and was mentioned in Despatches. He was appointed to the position of Assistant Traffic Manager (Operating) at Doncaster in August, 1919, but he was released in February, 1920, to take up an appointment as Railway Adviser on the staff of the Inter-Allied Plebiscite Commission at Marienwerder, Eastern Prussia, where he was required to report on the problems associated with the movement of traffic through the Polish Corridor. He was appointed Assistant District Superintendent at Doncaster in January, 1924, and remained there until his appointment as District Superintendent at Nottingham in 1932. From January, 1940, until his present appointment he was carrying out special duties in connection with train working, with the title of Acting Assistant Superintendent, Southern Area, L.N.E.R.

Mr. W. H. Telfer, whose appointment as Operating Assistant to the Manager, Cheshire Lines Committee, we recorded in our July 25 issue, was a nominee of the late Sir Frank Ree, at one time General Manager of the London & North Western Railway. Mr. Telfer began his career with the L.N.W.R. as a station clerk at Pinner & Hatch End. He was subsequently posted to Leicester, Wolverhampton, and Harrow, and the District Superintendent's office, Euston, at which office he was employed on the outbreak of the last war. From 1915 to 1919 he saw service with the Army in France and Italy. On rejoining the railway, Mr. Telfer became a relief clerk, and subsequently was made a District Inspector for the London area of what is now the Western Division. Later he was appointed Assistant District Controller at Bletchley; went to Wakefield in a similar capacity; and thence to Derby, L.M.S.R., in the Outdoor Section, where he took charge of

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the Signalling Section. While at Derby he was transferred from the Signalling Section to become Assistant Divisional Controller for Freight Services, which position he has now left to take up his appointment at Liverpool Central station with the Cheshire Lines Committee.

The death, announced in our issue of August 1, of Mr. A. E. Sims, Chief Railway Commissioner-Designate, Burma, deprives Burma and India of one of their most promising railway administrators. Mr. Sims was the third son of the late Sir Thomas Sims, Kt., C.B., and was born in March, 1892. Mr. Sims was appointed to the Indian State Railways as an Assistant Traffic Superintendent in November, 1914, and was posted to the Eastern Bengal Railway. In December, 1922, he was promoted to be District Traffic Superintendent, and in May, 1933, was appointed a Member and Secretary of the Railway Rates Advisory Committee. In June, 1937, he was selected to fill the vacancy as Traffic Manager of the Burma Railways, despite the fact that Burma had already been separated from India, and it was obvious that he was then a marked man for higher appointments. On the retirement of Sir John Rowland from the position of Chief Railway Commissioner, Burma, in February last (recorded in our March 7 issue), Mr. Sims was selected to take his place on his return from leave, during which his untimely death has unfortunately occurred.

The London Gazette of August 8 announces that, under authority of a Royal Warrant, the Viceroy of India conferred at Simla on June 24 the honour of knighthood upon: Mr. Leonard Wilson, Chief Commissioner of Railways; Mr. Kenneth Grant Mitchell, C.I.E., Indian Service of Engineers, Consulting Engineer (Roads) to the Government of India; and Mr. Edmund Bernard Pratt, Managing Director, Imperial Chemical Industries (India) Limited.

Mr. Ashley S. Ward has been appointed Chairman & Managing Director of Thos. W. Ward Limited; Mr. George Wood, Deputy Chairman & Managing Director; Mr. Arnold Carr a full Director of the company; and Mr. Stagg a Managing Director. Mr. Ashley S. Ward has also been appointed Chairman of the Ketton Portland Cement Co. Ltd.; and Mr. F. R. Stagg Deputy Chairman & Managing Director.

We regret to learn of the death, on May 31, of Mr. H. C. Way, who, since December, 1935, has been Deputy Chief Engineer, Signals, Bombay, Baroda & Central India Railway, Bombay. Mr. Way was trained in the Signal Department of the former L.S.W.R. at Wimbledon, where his father was for a time Chief Inspector. He served in the Royal Engineers in the last war and went to the B.B. & C.I.R. about twenty years ago.

Mr. A. H. Railing and Mr. L. C. Gamage have been appointed General Managers of the General Electric Co. Ltd. Both have been Directors of the company for many years. Mr. Railing has been in charge of the engineering activities of the company and Mr. Gamage has been Secretary & Director in charge of export. Mr. Gamage will continue to act as Secretary.

The death is announced in Barcelona, at the age of 85, of Señor Eduardo Maristany, Marques de Argentera. Señor Maristany was the General Manager of the Madrid, Zaragoza & Alicante Railway until 1934, when he retired and was appointed a Director of the company. He was a leading figure in Spanish railway circles, and was responsible for many outstanding engineering works, such as the Argentera tunnel. He was a grandson of Manuel Gibert, who built and worked the Barcelona-Mataro line, the first railway in Spain.

After 53 years of continuous service with the Manchester Ship Canal Company and the Bridgewater Canal, Mr. T. Rylance Hague, Bridgewater Canal Superintendent, is to retire on September 30. Mr. Hague is also Liaison Officer and Secretary of the North-Western Regional Canal Advisory Committee (Ministry of Transport), and serves on the Manchester Port Emergency Committee, the Canal Joint Committee (London), the executive of the National Association of Canal Carriers (Birmingham), and the North-West Regional Transport Advisory Committee.

As recorded in our July 25 issue (at page 99), Mr. C. Cowley has been elected a Director of the Antofagasta (Chili) & Bolivia Railway Company and of its associated companies, the Chilian Northern Railway Company and the Andes Trust. Mr. Cowley will continue to act as Secretary of these companies.

L.N.E.R. Chief Electrical Engineer's Department

The L.N.E.R. announces that from August 1 the undermentioned changes of title in the Chief Electrical Engineer's Department have been made :—

Mr. H. H. Swift, Assistant Electrical Engineer, to be styled Assistant Chief Electrical Engineer.

Mr. B. James, Assistant Electrical Engineer (Southern Area), to be styled Electrical Engineer (Southern Area).

Mr. H. W. Green, Assistant Electrical Engineer (North Eastern Area), to be styled Electrical Engineer (North Eastern Area).

Mr. J. R. Shewan, Assistant Electrical Engineer (Scottish Area), to be styled Electrical Engineer (Scottish Area).

Sir I. Thomas Williams, a Director of the London & North Western Railway and the London Midland & Scottish Railways from 1921-1939 and General Manager of the L.N.W.R. in 1919-1920, whose death we recorded in our May 23 issue, has left estate valued at £50,052.

Death of G.W.R. Solicitor

We regret to record the death, on August 18, after a short illness, of Mr. Christopher Horsley Whitelegge, Solicitor & Parliamentary Agent to the Great Western Railway since August of last year.

Mr. Gilbert S. Szlumper, formerly General Manager, Southern Railway Company, and later, Railway Control Officer, Ministry of War Transport, who has joined the Board of Trade to advise on transport problems. Mr. Szlumper's views on coal transport are the subject of an editorial note at page 181

TRANSPORT SERVICES AND THE WAR—103

Civilian air raid casualties during July—The railways of Soviet Russia—Railway developments in Germany and occupied territories —Trans-Canada Air Lines in wartime—Recent political changes

The Ministry of Home Security has announced the following figures of civilian casualties due to air raids on the United Kingdom during the month of July, 1941 :—

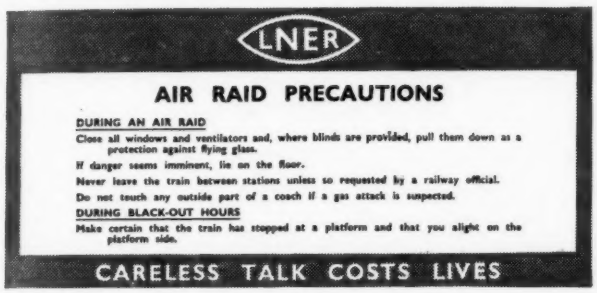
Killed (or missing and believed killed)	Injured (and detained in hospital)
501	447

The figures are made up as follow :—

	Killed (or missing and believed killed)	Injured (and detained in hospital)
Men	199	197
Women	186	182
Children (under 16) ...	75	68
Unclassified	41	—

A.R.P. Carriage Panels on the L.N.E.R.

With the approach of longer blackout hours and the need for stressing directions to be observed during enemy air raids, opportunity is being taken by the L.N.E.R. to replace the


LNER
AIR RAID PRECAUTIONS
DURING AN AIR RAID
Close all windows and ventilators and, where blinds are provided, pull them down as a protection against flying glass.
If danger seems imminent, lie on the floor.
Never leave the train between stations unless so requested by a railway official.
Do not touch any outside part of a coach if a gas attack is suspected.
DURING BLACK-OUT HOURS
Make certain that the train has stopped at a platform and that you alight on the platform side.
CARELESS TALK COSTS LIVES

notice at present appearing in railway compartments by a new carriage panel using the standard blue border which the L.N.E.R. recently adopted for letterpress posters and to which we referred at page 710 of our June 27 issue. This new carriage panel is reproduced herewith.

American Aid for Britain

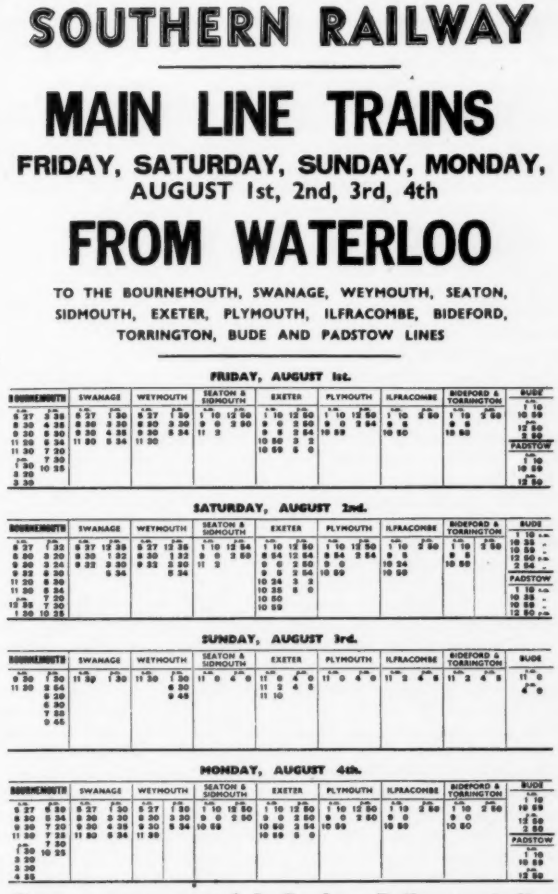
On several occasions in THE RAILWAY GAZETTE, particularly in our issues of June 13 and August 1, we have referred to gifts by the employees of United States railways to assist the British war effort. On the former date the subscription of $67,000 by Baltimore & Ohio-Alton employees for the purchase of a flying ambulance for the R.A.F. was recorded. A total of some $75,000 was contributed and $6,800 of the surplus is to be used for the establishment of a Baltimore & Ohio-Alton Home in England for homeless children. The *Baltimore & Ohio Magazine* states that the $6,800 has been cabled to the headquarters of the Foster Parents' Plan in London, and that it will be sufficient to equip a house as a home for from 20 to 30 children whose homes have been destroyed or whose parents have been killed.

L.N.E.R. Catering in Scotland

A plea that the L.N.E.R. had been working under very considerable difficulties and pressure from the Government and the public, and had been called upon to supply an increased number of meals both in dining-car services and at the hotel itself was put forward when the North British Station Hotel, Princes Street, Edinburgh, was fined £10 for receiving meat last January in excess of its ration. It was pointed out by a representative of the railway company that the hotel helped to supply food for dining-car services, and that during January the number of meals supplied on the Edinburgh-Aberdeen service was 11,202, an increase of 3,451 compared with the corresponding month last year. There was also a greatly increased use of the hotel in January, and the total number of meals supplied, including dining-car services, was 48,618, an increase of 5,353. These extra meals were mostly for officers and men of the Forces. It will be remembered that there was at that time a great outcry about how badly Servicemen travelling by train were treated in the way of food.

Kenya & Uganda Railways & Harbours

The report of the Kenya & Uganda Railways & Harbours Administration for the year 1940 gives some idea of its activities in the war effort. In the Engineering Department, all military requirements for sidings, storage depots, housing, prisoners of war camps on railway property, etc., were met speedily and efficiently at low cost. The construction of a new branch railway was also taken in hand at short notice. The Mechanical Engineering Department carried out a vast amount of urgent military work of all kinds in the railway workshops, also at low cost, but of a high standard of workmanship and generally at high speed, necessitating the postponement or delay of normal railway work. All demands for troop movements, transport of supplies, stores, vehicles, etc., were met by the Transportation Department without accident or delay at specially reduced rates. These movements at times put a severe strain on the resources of the administration and


SOUTHERN RAILWAY

MAIN LINE TRAINS

FRIDAY, SATURDAY, SUNDAY, MONDAY, AUGUST 1st, 2nd, 3rd, 4th

FROM WATERLOO

TO THE BOURNEMOUTH, SWANAGE, WEYMOUTH, SEATON, SIDMOUTH, EXETER, PLYMOUTH, ILFRACOMBE, BIDEFORD, TORRINGTON, BUDE AND PADSTOW LINES

FRIDAY, AUGUST 1st.

BOURNEMOUTH	SWANAGE	WEYMOUTH	SEATON & SIDMOUTH	EXETER	PLYMOUTH	ILFRACOMBE	BIDEFORD & TORRINGTON	BUDE
a.m. a.m.	a.m. a.m.	a.m. a.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m.
8 27 2 38	8 27 1 30	8 27 1 30	1 10 12 50	1 10 12 50	1 10 12 50	1 10 2 50	1 10 2 50	10 59
8 30 4 38	8 30 3 30	8 30 3 30	9 0 2 50	9 0 2 50	9 0 2 54	9 5	9 5	12 50
9 20 6 30	9 30 4 35	9 30 5 34	11 2	9 5 2 54	10 59	10 50	10 50	2 50
11 20 6 34	11 30 5 34	11 30		10 50 3 2				PADSTOW
11 30 7 20				10 59 5 0				a.m.
p.m. 7 30								7 10
1 30 10 35								10 59
2 20								p.m.
3 30								12 50

SATURDAY, AUGUST 2nd.

BOURNEMOUTH	SWANAGE	WEYMOUTH	SEATON & SIDMOUTH	EXETER	PLYMOUTH	ILFRACOMBE	BIDEFORD & TORRINGTON	BUDE
a.m. a.m.	a.m. a.m.	a.m. a.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m.
8 27 1 32	8 27 12 35	8 27 12 35	1 10 12 54	1 10 12 50	1 10 12 50	1 10 2 50	1 10 2 50	10 55
8 30 3 20	9 30 1 22	8 30 1 22	9 0 2 50	8 54 12 54	8 54 2 54	8 5	8 5	10 59
9 30 3 34	9 33 3 30	9 33 3 30	11 2	9 0 2 50	9 0	10 24	10 50	12 50
9 32 6 30	5 34	5 34		9 5 2 54	10 59	10 50		2 54
11 20 8 30				10 24 3 2				PADSTOW
11 30 8 34				10 35 5 0				a.m.
p.m. 7 20				10 50				10 55
12 35 7 30				10 59				12 50 p.m.
1 20 10 35								

SUNDAY, AUGUST 3rd.

BOURNEMOUTH	SWANAGE	WEYMOUTH	SEATON & SIDMOUTH	EXETER	PLYMOUTH	ILFRACOMBE	BIDEFORD & TORRINGTON	BUDE
a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m.
9 30 7 30	11 30 7 30	11 30 7 30	11 0 4 0	11 0 4 0	11 0 4 0	11 2 4 8	11 2 4 8	11 0
11 30 8 54		6 30		11 2 4 8				4 0
8 30		9 45		11 10				
6 30								
7 52								
9 45								

MONDAY, AUGUST 4th.

BOURNEMOUTH	SWANAGE	WEYMOUTH	SEATON & SIDMOUTH	EXETER	PLYMOUTH	ILFRACOMBE	BIDEFORD & TORRINGTON	BUDE
a.m. a.m.	a.m. a.m.	a.m. a.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. a.m. p.m.	a.m. p.m.	a.m. p.m.	a.m.
8 27 8 30	8 27 1 30	8 27 1 30	1 10 12 50	1 10 12 50	1 10 12 50	1 10 2 50	1 10 2 50	10 59
8 30 5 34	8 30 3 30	8 30 3 30	9 0 2 50	9 0 2 50	9 0 2 54	9 0	9 0	12 50
9 30 7 20	9 30 4 35	9 30 5 34	10 08	10 50 3 54	10 59	10 50	10 50	2 50
11 30 7 35	11 30 5 34	11 30		10 59 5 0				PADSTOW
7 30								a.m.
p.m. 10 35								7 10
3 30								10 59
3 30								p.m.
4 35								12 50

Poster announcement of the Southern Railway main-line services from Waterloo for the August Bank Holiday week (*See Questions in Parliament, page* 201)

on the operating staff, particularly under blackout conditions. The Port Department dealt efficiently and rapidly, at specially reduced rates, with movements of personnel and stores, both inwards and outwards, often of considerable magnitude. Of the staff some 68 Europeans were released for military duties in the early stages of the war. When traffic demands increased beyond expectations, as a result of Italy's entry into the war, twelve of these were recalled to duty, with the consent of the military authorities. Financial aid has included a loan of £200,000 to the Government free of interest for the duration of the war; remission of railway and port charges, amounting to £300,000 on account of military traffic during 1940, with a promise of a further £250,000 for 1941; and a sum of £50,000 invested in War Loan in 1940, with a promise of further sums so to be invested in 1941.

Transport in Soviet Russia

A detailed analysis of the present position of Soviet industries is included in the July issue of our American contemporary *Fortune*. This article, which was prepared and published just before the German invasion of Soviet territory, covers all branches of industrial activity, and its comments on transport are extracted as follow.

One of the miracles of the Soviet industrial revolution is that the U.S.S.R. railway system functions as well as it does. By American standards the service would be considered intolerable. Apart from the question of quality of passenger accommodation, which does not concern us here, the freight service is slow and irregular, interrupted by an appalling frequency of derailments and collisions. The average commercial speed of a Russian freight train, gradually increased over the last seven years, now is about 14 m.p.h., compared with 17 m.p.h. in the U.S.A. Rails and roadbed are far from adequate, and much of the rolling stock is antiquated. Operation and maintenance are mediocre. Yet the system carries about three-fourths as much freight traffic as U.S.A. railways on about one-sixth the track mileage, and its load increases every year.

In the U.S.S.R. practically all the long-distance freight is hauled by the railways. Their share last year, 409,000,000,000 ton km., was 90 per cent. The remaining fraction was carried mostly by the inland waterways, which were formerly an important transport medium (handling one-third as much as the railways in 1913), but which the Soviet Russians have not developed successfully. Motor transport is negligible; despite the strenuous efforts of the Soviet engineers, road building has barely begun. Lorries are few, and drivers mostly third rate.

From 1913 to 1939 the route mileage of the Soviet railway system was increased by a little less than 50 per cent., namely, from 58,500 km. (36,350 miles) to about 86,500 km. (53,750 miles).* The route mileage in occupied Poland, Bessarabia, the Finnish concessions, and the Baltic republics brought the total to 102,500 km. (63,700 miles) in 1940. In that same period (1913 to 1939) freight traffic increased five times. This staggering overload is expressed by Soviet authorities as a sort of boast—that the U.S.S.R. leads the world in traffic density. If it is a boast, at least it is justified. Last year Soviet railways hauled about 4,300,000 tons of freight per km. of track, compared to 939,000 for the U.S.A. Moreover, the Third Five-Year Plan provides for an increase in traffic density to 5,400,000 tons.

That extraordinary density is sustained despite inadequate rolling stock. Here the Russians had to overcome the terrific losses of the war of 1914 and the Revolution, during which 60 per cent. of all locomotives and 30 per cent. of all goods vehicles were destroyed or disabled. By last year they had about 25,000 locomotives (of which an average of 20 per cent. are always under repair) but that was only 47 per cent. more than Russia had in 1913. Freight cars, at approximately 800,000 (less 10 per cent. laid up for repair), were less than double the 1913 supply. Of course, locomotives built in recent years are much more powerful than the 1913 types, and the newer freight cars have far greater carrying capacity. Even so the net tractive and loading capacity of the rolling stock is only about three times that of 1913, while the load carried has increased five times, which means intensive use of line and equipment. Average daily car-loadings last year were about 99,000, or 3½ times the 1913 rate.

Creditable as it may be that the Russians have squeezed so much transport out of an inferior system, their situation is shaky, concludes *Fortune*. Everything depends on the railways—oil for the mechanised farms, even timber, an enormous load, which ought to be handled by river and highway. What the rigours of a full-scale war would do to that overstrained system can be deduced from the fact that even the Finnish campaign caused a food shortage in Moscow, says our American contemporary. On the other hand, it must be noted that relatively no attack on the transport problem was made until 1935, and considerable improvement has been shown in the few years since then. As for the immediate future, the Third Five-Year Plan is ambitious, calling for 11,000 km. (6,835 miles) of new railway, plus 8,000 km. (4,970 miles) of track doubling; and 8,000 new locomotives and 225,000 new freight cars. Judging from production so far, it is doubtful whether the plan for new rolling stock will be approached. However, railway congestion is also being attacked at its source by the general plan for decentralisation and diversification, so that crops may be consumed near their sources and products that can be made almost everywhere, such as bricks, may be eliminated from the long-haul lists. If this decentralisation should succeed, the planners estimate that by 1942 a 93 per cent. increase in production would create only a 44 per cent. rise in tonnage per km.

Two tables are included in the article, one dealing with production and the other with the three Five-Year Plans. The following figures relating to transport are extracted from these:—

U.S.S.R PRODUCTION

	1937	1938	1939	1940	Plan 1942
Motorcars (thousand) ... } Lorries (thousand) ... }	200·0	210·9	est. 25·6 / est. 169·3	—	400·0
Tyres (thousand)	—	3·5	—	—	10·0
Locomotives (thousand) ...	1·5	1·6	est. 1·6	—	2·3
Goods wagons (thousand) ...	59·1	49·1	esy. 52·0	51·0	120·0
Average daily car loadings (thousand)	—	88·0	93·3	est. 99·0	130·0
Railway freight (thou. mil. ton-km.)	354·8	369·4	392·0	409·0	510·0

All weights are given in metric tons (1 metric ton = 2,204·62 lb.).

THE THREE FIVE-YEAR PLANS

—	I: 1928–1932		II: 1933–1937		III: 1938–1942	
	Planned increase over 1927	Actual increase achieved	Planned increase over 1932	Actual increase achieved	Planned increase over 1937	Actual increase in 1939) (estimated)
Tractors ...	4,131	3,884	75	59	—	—
Motorcars and lorries ...	—	3,467	737	737	100	— 3
Locomotives ...	72	72	238	91	48	1
Goods wagons	—	136	431	173	103	— 14

Rail and Canal Co-ordination in Germany

The *National Zeitung* of June 21 said that, although German transport authorities had succeeded in co-ordinating rail and canal services to a considerable extent since the outbreak of war, there was still much scope for further improvements. The paper emphasised that the abolition of railway tariffs which discriminated against canal shipping had accounted for the great revival of activity on inland waterways. Plans were now under consideration to facilitate the transfer of piece goods traffic from the railways to inland waterways. As a result of the increased use of the inland waterways, companies in the industry had increased their profits. It was stated in the *Berliner Börsen-Zeitung* of June 18 that the War Economy Decree of 1939 was applied also to this industry, and that its members should determine voluntarily to what extent they would be able to reduce prices, in order to prevent future excess profits. The Neue Norddeutsche und Vereinigte Elbe-Schiffahrts A.G., Hamburg, has reported that its gross yield declined from RM. 5,450,000 in 1939 to RM. 4,350,000 in 1940, stated the *Deutsche Allgemeine Zeitung* of July 11. The number of

* These figures accord very closely with those given by Mr. Brian Reed in his article in THE RAILWAY GAZETTE of August 1, page 107—ED. R.G.

persons employed by the company was reduced from 1,446 to 1,375 persons and on balance the company incurred a loss of RM. 500,000. The decline of this company's activities is presumably exceptional, and may have suffered from the R.A.F. bombing attacks on Hamburg.

Improved Second Class Sleepers in Germany

It is reported in the *Frankfurter Zeitung* of July 16 that the sleeper accommodation for second class passengers on the German Reichsbahn has been improved. Despite the war, the Reichsbahn authorities have placed orders for the delivery of a number of modern sleepers, which are considerably better than the old models, because each passenger has separate accommodation. The *Frankfurter Zeitung* of July 15 stated that the Reichsbahn authorities had decided to prevent ordinary travellers with third class tickets from making use of second class accommodation. Persons who are found in the wrong carriages are punished by the imposition of a fine of twice the amount of the ordinary ticket.

The Mitropa in Wartime

The Mitropa (Mitteleuropäische Schlafwagen und Speisewagen A.G.), Berlin, has summarised in some detail the effect of the war on the services which it is permitted to offer, according to the *Berliner Börsen-Zeitung* of July 17. At the outbreak of war the Reichsbahn cancelled all Mitropa services (kitchen cars, diners, and sleepers). These services were gradually reinstated, and in July, 1940, the daily average of sleeping cars in use amounted to 166, as compared with 244 in 1939. The numbers of dining cars and kitchen cars were 154 and 11 respectively, compared with 298 and 105 in 1939. It is stated in the *Frankfurter Zeitung* of July 17 that, despite the reduction of transport provided for civilians, the Mitropa gross revenue increased from Rm. 44·28 million in 1939 to Rm. 50·1 million in 1940. This increase in revenue was due to the extension of the company's services to other European countries. During 1940, the Mitropa provided new services for the railways of Holland, Belgium, France, and the General Government of Poland, apart from those at work in pre-war days.

German Railway Changes

The special cheap transport rates enjoyed by German coal exporting regions were extended on July 1 to apply to anthracite, coke, and briquettes sent from Lorraine by rail to Deggendorf Hafen, Passau, and Regensburg, and from there shipped on the Danube to points in Austria, Hungary, Bulgaria, Jugoslavia, and Greece, according to the *National Zeitung* (Essen) of July 8.

For the week from July 16-21, passengers leaving stations in Westphalia for points in south, north, and central Germany were required to obtain special travel permits in addition to their ordinary tickets, according to the *Westfälische Landeszeitung* of July 16. Even if a permit were obtained, trains might not be used for shorter journeys than 150 km. (93 miles).

The *Kölnische Zeitung* of July 1 stated that, in order to reduce queuing and to facilitate the work of railway ticket-issuing staff, the Reichsbahn at Essen now issues cheap tickets for short distances in blocks of ten, but without reduction in price. These tickets are transferable and may be used in either direction.

The Reichsbahn is granting special tariffs for the transport of exhibits to the Leipzig Fair, which is to be held from August 31 to September 4, according to a statement appearing in the *Hamburger Fremdenblatt* of July 22.

Railway Planning in Poland

The Polish newspaper *Nowy Swiat* of May 24 (before the German invasion of Russia) reported a new decision of the German authorities affecting the whole railway system in German-occupied Polish territories. The basis of the plan is that the Posen (Poznan)—Lowicz—Warsaw trunk line is to be relegated to a secondary place. This is because the German intention is to make Breslau the new sorting centre for the east, with main railways extending to Posen and Thorn (Torun), to Warsaw, to Kielce and Lublin, and to Krakow and Lemberg (Lwow). Some of these lines are already in existence although doubtless they will require considerable reconstruction. Others of these main railway routes radiating from Breslau will involve new construction, and the German statement says that when the work is taken in hand, it will be effected with the aid of compulsory Polish labour.

The direct line between Posen and Warsaw, which under this scheme is to be relegated to secondary use, was a Polish product after the war of 1914-19. Before that time Posen was in Germany, near the eastern frontier of that country, but most of the territory between Posen and Warsaw was in Russia, and the two powers had no particular incentive to link the two towns by direct railway. In 1921 a new line of 111 km. (69 miles) was opened between Strzalkowo and Kutno, providing for the first time a practically straight route from Warsaw to Posen and much improving the international communications between Western Europe, Poland, and Russia. The Nord Express used this line.

Trans-Canada Air Lines in Wartime

Every phase of civil aviation in Canada has been affected profoundly by war conditions, and Trans-Canada Air Lines (the Associate of the Canadian National Railways) gives some indication, in its report for the year 1940, of the contribution of that organisation to the war effort. The company's instrument shop at Winnipeg was doubled in capacity and is working full time in the overhaul and repair of aircraft instruments for the Royal Canadian Air Force. Under contract with the Department of Munitions & Supply, a shop was established at Malton airport (Toronto) for the overhaul and repair of military aircraft, and is now in operation. The facilities of the company at the various airports across Canada are used extensively for servicing military aircraft, and radio facilities are furnished as required. Flight personnel of the company have assisted in the delivery of training aircraft purchased in the United States; in ferrying military and training aircraft between the different training depots in Canada; and in training civilian pilots proceeding overseas. A considerable amount of this work was done by Trans-Canada employees in their own time as a contribution to the war effort.

Various Political Changes

With the progress and spread of the war, the creation of new alliances, and the continued attempt of Germany to spread its influence over Europe, various political changes have been effected recently.

On July 18 an agreement was signed in London between the Union of Socialist Soviet Republics and the Czechoslovak Republic, by which diplomatic relations between the two countries were restored.

On July 30 Poland and Russia signed an agreement setting aside the Soviet-German Treaty of 1939 and pledging mutual support in the war against Germany.

On August 2 it was officially stated in London that Finland was to be regarded as enemy-occupied territory for the purposes of the Trading with the Enemy Act and of economic warfare. All communications were interrupted between Finland and Britain.

On the same day (August 2) it was announced that a state of civil emergenecy had been proclaimed throughout Norway by the Reich Commissioner. German military law was introduced, and all radio receivers in a number of provinces, particularly those on or near the coast, were ordered to be surrendered.

On August 5 Sir Godfrey Huggins, Prime Minister of Southern Rhodesia, in an address to the United Party of Congress, announced that he had agreed to the request of the Secretary of State for the Colonies that the amalgamation of the two Rhodesias should be deferred for a time, but they had also agreed that it should not necessarily be postponed for the duration of the war.

On July 24 it was announced that the post of Canadian High Commissioner to Newfoundland had been created, and that Mr. Charles Burchell, then High Commissioner to Australia, was to occupy the post. The announcement was made by Mr. Mackenzie King, Premier of Canada, who, in his statement, referred to "other Dominions"; this statement was regarded as significant because Newfoundland's status as a Dominion was suspended in 1933 and was replaced by a Commission until such time as the island again became self-supporting.

XUM

Ministry of War Transport Accident Report

Between Harold Wood and Brentwood, L.N.E.R., February 10, 1941

Major G. R. S. Wilson inquired into the accident which occurred on the 1 in 100 bank between Harold Wood and Brentwood stations, L.N.E.R., at 10.46 a.m. on February 10, 1941, when the 10.0 a.m. express, Liverpool Street to Norwich, composed of 13 bogie coaches of modern construction, drawn by "B 17" class 3-cylinder 4-6-0 locomotive No. 2828, which had come to a stand for want of steam at an automatic colour-light signal, was run into at about 30 m.p.h. by the 10.4 a.m. stopping train, Liverpool Street to Southend, formed of 10 bogie coaches of older type, drawn by "B 12" class 2-cylinder 4-6-0 locomotive No. 8556. The Norwich train had been stationary for about 8 minutes, and the Southend train had ignored a red signal, 467 yd. in rear of it, and a yellow one 925 yd. in rear of that, of both of which there was a perfectly good view. The signalling apparatus was in order. The weather was fine, sunny and unusually clear. Serious damage to the Norwich train was confined to the last coach, which was destroyed; the leading two vehicles in the Southend train were telescoped, but no person was in the parts affected. Five passengers were killed and two—one a company's servant—fatally injured. Seventeen passengers and the enginemen of the colliding train were seriously injured.

The engine of the Norwich train had been booked "dull of steam" and examined a week before the accident, when it was thought that a vacuum exhaust pipe joint, which was dealt with, accounted for it. After the accident, there being no obvious defect, valves and pistons were removed and the piston rings found to have ¼ in. gap, more than could be expected from the mileage—14,000 since the last piston and valve examination—and this was considered to be the primary cause of the stop on February 10, combined with the heavy load of 415 tons, and the steep gradient. Driver Hudson knew of nothing wrong and said the load should have given no difficulty with the engine in good condition. Steaming was, however, sluggish from the start and before the Brentwood bank pressure had fallen from 200 to 160 lb. per sq. in. He eventually decided to stop at a signal and telephone to Brentwood signal box. Finding there was only a small engine there, he elected to remain and recover steam. It was too late for Gidea Park, informed by Brentwood, to divert the following train from the through to the local line. Head Guard Adams, after conversation with Hudson, went back again, heard the Southend train coming and, with the assistant guard, Appleby, endeavoured to stop it. He managed to put down a detonator 30 yd. in rear of his train. The approaching engine was seen to be steaming hard. After the collision Hudson went to it and found the regulator about half open and the vacuum ejector in the running position. The engine had the Westinghouse brake controlled independently or by the vacuum ejector controlling the train brakes.

Driver Burkett, of the Southend train, who, with his fireman, Porter, received severe burns and scalds, admitted his responsibility for the collision and made no excuses. His recollection was rendered vague by shock, and he could only recall seeing the last green signal, but did not remember passing it, or anything else at all until he saw the other train a yard or two ahead. He was quite unable to account for passing the caution and danger signals unnoticed, or failing to see the obstruction in time. He was well acquainted with the road and had come on duty at 5.15 a.m. after a Sunday at home. His fireman said he had noticed once or twice on previous runs that Burkett became drowsy for a few seconds, and he was therefore always careful to look out for signals himself when his duties permitted. On this occasion, however, he happened to be fully occupied with the fire. His first warning was air escaping from the Westinghouse brake valve; he then saw Burkett looking up dumbfounded. Neither of them heard the detonator. The collision followed immediately. Evidence was given that Burkett was in good health and spirits when he booked on duty. Since recovery from his injuries he has been reported fit in every way, with no trace of any condition that might have predisposed him to temporary loss of memory, or to unnatural drowsiness or sleep. He is 56½ years of age, a driver for 20 years, spoken of as reliable without any outstanding qualities.

Scene of Brentwood collision, L.N.E.R.

The telescoping of the first two vehicles of the colliding train and that of its engine with the last vehicle of the standing train, may be noted

Inspecting Officer's Conclusions

The conclusion of the Inspecting Officer is that Burkett failed to maintain a proper lookout ahead. Apart from the signals, he could have seen the other train in good time, had he been looking. He must have relaxed his attention after leaving Harold Wood to such an extent as to become drowsy and may even have fallen asleep. His account indicates that he must have been in this condition for some 2½ miles, until presumably aroused by the detonator. Such a grave lapse by an experienced driver is difficult to explain. No blame rests on the fireman who was fully occupied with the fire, and he can hardly be blamed for not mentioning to his superiors Burkett's failing.

Had the guard been able to lay the detonator 200 yd. in rear it should have been possible to stop the Southend train, assuming the enginemen's attention to be attracted. But Adams acted reasonably quickly and was obliged by the rules to go forward first, to ascertain the cause of the stop. Although the rules do not lay down specifically the duties of an assistant guard in such circumstances it is to be regretted that Appleby did not rise to the occasion. He had plenty of time to get some distance to the rear while Adams went forward.

Major Wilson makes no recommendation. He points out that the collision would have been prevented by A.T.C., but with multi-aspect colour-light signalling, experience hitherto has shown that the arguments for its provision are not so strong, at any rate under main-line conditions. When a train is stopped in a section from any unusual cause, protective duties should be carried out as promptly as circumstances allow, even where there is track circuit.

Parliamentary Notes

Coal Supply

The supply of coal was discussed in the House of Commons on August 5.

Mr. D. R. Grenfell (Secretary for Mines) said that, while he could give no guarantee, he hoped that soon the coal stocks of all public utility undertakings would have been raised to a more uniform level, thus obviating the risks due to the failure of a small number of public utilities to acquire sufficient coal to replenish the low stocks held by them after last winter.

Mrs. M. Tate (Frome—C.) criticised the calling up of miners for the Services when the Government was urging miners to produce more coal. She would be interested to know how much of the coal used over the Bank Holiday week-end could have been saved had no extra trains been permitted.

Mr. Lewis Jones (Swansea West—Lib. Nat.) said last winter the problem was one of transport, today the problem was insufficiency of production and empty coal wagons. The Government would very soon be forced to take off a large number of passenger trains to provide transport accommodation for coal.

Mr. Ralph Glyn (Abingdon—C.) said that not long ago the railways were down to their last three weeks' supply of coal. That situation had become better, but it was one that was still causing grave anxiety. He hoped Members would appreciate the difficulties under which railwaymen had to work during the blackout. There would be inevitable congestion on the railways in trying to rush coal to essential works and industries. Coal should have been distributed and stocks made up all through the past summer.

Sir Andrew Duncan (President of the Board of Trade) said they had asked Mr. Gilbert Szlumper to give them his whole time at the Board of Trade and the Mines Department for the purpose of co-ordinating all the effort in relation to transport problems whether by rail, sea, or canal. He was settling down, indeed he had been engaged upon the task for several weeks, and he was glad to say that there were many aspects that were favourable. One would expect, therefore, that in the problem of transport many of the difficulties which were encountered last winter would not be encountered this winter. He ought to add that they were having the whole-hearted co-operation and support of the Minister of War Transport, and it was a great advantage that both shipping and rail were now under one Ministry. The public utility undertakings had a very important place in the distribution of stocks. For some weeks a committee had been devoting its whole attention to the subject. Very substantial progress had already been made, not only in ascertaining the total number of tons in reserve, but in evening-out stocks. There was no doubt that they would start this winter by having a certain number of weeks' coal in stock among the public utility companies much more evenly held than before. The average held last winter covered a great disparity between the highest and the lowest, and many places were in a position of disadvantage. This winter they hoped to start with a very small disparity between the highest and the lowest.

Questions in Parliament

Canals and Inland Waterways

Mr. W. Thorne (Plaistow—Lab.), on July 22, asked the Parliamentary Secretary to the Ministry of War Transport whether he proposed to put in the Vote Office the report of Mr. Frank Pick.

Colonel J. J. Llewellin : No, Sir.

Mr. Thorne : Why not ?

Colonel Llewellin replied that Mr. Frank Pick was employed as a member of the Department and was still being employed as such, and it was unusual when a return was made within the department to publish it. That was the main reason why it was not published.

Mr. Thorne said that surely Colonel Llewellin must know that Members of the House were very much interested in the waterways of this country.

Colonel Llewellin : Yes, and quite rightly so. We are carrying out a substantial part of the recommendations and Mr. Pick is helping us to do it, and I shall be delighted on a future occasion to explain what we are doing.

Fifeshire Railway Stations

Mr. W. Gallacher (West Fife—Communist), on July 23, asked the Parliamentary Secretary to the Ministry of War Transport whether he was aware of the recent decision of the Fife County Road Board to request the London & North Eastern Railway Company to reopen the passenger stations at Boarhills, Stravithie, Kingsbarns and Kelty in order to reduce congestion on the omnibuses serving these places ; and whether, in view of the essential public interest and importance of these stations being reopened, he would consult with the railway company as to the possibility of acceding to the request.

Colonel Llewellin replied that he was making inquiries.

Workers' Facilities

Mr. Ellis Smith (Stoke—Lab.), on July 23, asked the Parliamentary Secretary of the Ministry of War Transport whether he was aware of the concern caused by the North-West Regional Transport Commissioner's request about the saving of petrol and oil ; that a high percentage of that consumed in the area was in workpeople's services ; that, as the people required some relaxation at week-ends, the workpeople's services needed to be increased ; and what was the policy of the Ministry in the matter.

Colonel J. J. Llewellin said that the services required to take people to and from essential work must have the first call on the allotment of motor fuel for road passenger services. Subject to the need for economy fuel was also made available for reasonable recreational facilities for workers with proper regard to the length of the journey, the availability of other means of transport, and the effect of the supply of vehicles and drivers for essential services.

Traffic Signs in Fife

Mr. T. Kennedy (Kirkcaldy—Lab.), on July 24, asked the Parliamentary Secretary to the Ministry of War Transport whether he was aware that the Divisional Road Engineer of the Ministry of Transport at Edinburgh had refused to grant the application of the Fife County Council for approval to the erection of a halt sign on the Windygates-Leven road at Scoonie roundabout.

Colonel J. J. Llewellin, in a written reply, stated that this roundabout was constructed in 1938 to facilitate free movement of traffic. Halt signs were intended for use at junctions where the view from a minor road of traffic on a major road was very restricted and the volume of traffic was considerable.

Locomotive Turntable Repairs

Mr. Bernard Taylor (Mansfield—Lab.), on August 6, asked the Parliamentary Secretary to the Ministry of War Transport if he was aware of the delay being caused owing to a locomotive turntable having been out of repair since June 9, 1941; if he would investigate whether it was due to the lack of the necessary material; and if he would have the matter rectified.

Colonel Llewellin said he understood that delay was due to difficulty in obtaining a certain casting. He was seeing what could be done.

New Railway Halt

Mr. A. Pearson (Pontypridd—Lab.), on August 6, asked the Parliamentary Secretary to the Ministry of War Transport whether he could now state when the proposed erection of the new railway halt at Treforest, Glamorganshire, would be commenced.

Colonel Llewellin : Very shortly, Sir.

Transport Facilities

Mr. F. Messer (Tottenham South—Lab.), on August 6, asked the Parliamentary Secretary to the Ministry of War Transport if he was aware of the inconvenience caused to workers travelling from work by the congestion caused by crowds of people leaving the greyhound racing-track at Harringay.

Colonel Llewellin said he was assured that no serious inconvenience was caused to homeward-bound workers by Harringay racegoers. The hours of racing were fixed in consultation with the transport authorities so as to avoid overlap with the rush hour traffic.

Bank Holiday Traffic

Sir John Mellor (Tamworth—C.), on August 6, asked the Parliamentary Secretary to the Ministry of War Transport what final instructions he gave to the railway companies with

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regard to traffic during the last week-end period.

Commander Stephen King-Hall (Ormskirk—Nat. Lab.) also asked why it was necessary to run so many additional trains during the August Bank Holiday period, in view of the Government's appeal to the public not to travel, and the imperative need of reducing coal consumption to the minimum consistent with the war effort; and whether, on future occasions, he would take care that appeals not to travel were reinforced by absence of abnormal travel facilities.

Colonel J. J. Llewellin replied that the railway companies were instructed that in accordance with the policy as to holidays generally no special facilities for travel should be provided and no extra trains should be run apart from those required to dispose of the overflow which could not be accommodated by the regular services. Despite the appeal not to travel, the number of passengers arriving at the stations was far in excess of the capacity of the scheduled train services and relief trains were necessary to remove the crowds of waiting passengers who had already paid their fares. Over the period as a whole there had been no hold-up of essential goods traffic.

Sir John Mellor asked if the Minister had any power to deal with a situation of that sort. If the railway companies were prevented by some legal difficulty from refusing to carry passengers, would it not have been possible to relieve them of that difficulty?

Colonel Llewellin said that they certainly had the power. They could direct that no passenger trains at all be run on Bank Holiday or on the Saturday, but in fact, although they did not want an extra number of people to travel, there were sufficient trains to take them away. There might not be in the winter months. While some of these people could get a holiday without interfering with essential railway traffic, it would be right to allow trains to run and to allow people to take a holiday which many of them thoroughly deserved.

Sir John Mellor asked how the Minister could reconcile the waste of coal with the Government's appeal to the miners to increase their efforts to produce coal and to the public to economise in the use of it.

Colonel Llewellin said he did not think they could stop all passenger trains because of a certain shortage of coal. He would be interested to know how many Members of that House travelled during the week-end.

Mr. G. Le M. Mander (Wolverhampton East—Lib.) asked why were the newspapers full of advertisements from the railway companies urging people to take advantage of special facilities to go on holidays at the time when they contained Government appeals to the public not to travel.

Colonel Llewellin said there was only one such announcement in the newspapers, and that had got in by error, and was stopped.

Railway Rates in Nigeria

Mr. R. W. Sorensen (Leyton West—Lab.), on August 6, asked the Under-Secretary of State for the Colonies whether he was aware of complaints being made in Nigeria respecting the effect of the high rate of railway freights in holding up internal trade in foodstuffs; and whether he would secure a reduction in the rates of foodstuffs.

Mr. George Hall (Under-Secretary of State for the Colonies) said he was not aware of the complaints to which Mr. Sorensen referred, but inquiry would be made of the Governor, and on receipt of his reply he would communicate with Mr. Sorensen again.

Alternative Fuels

Mr. David Adams (Consett—Lab.), on August 6, asked the Secretary for Mines whether the use of gas-producer and coal-gas driven machines had now developed upon a satisfactory commercial scale; and whether all encouragement possible was being given to these alternatives.

Mr. D. R. Grenfell (Secretary for Mines) replied that a number of firms had converted commercial vehicles to run on producer gas, and had found them satisfactory in operation, and the recently imposed restrictions on the use of petrol were giving additional impetus to the movement. It should be remembered, however, that the saving of imported petrol had to be balanced against the additional demand for steel and other materials which such conversion involved. Another limiting factor in any large-scale commercial development was the supplies of suitable fuel; and considerable progress was being made, both by road tests and by laboratory and other research, in extending the range of such fuels.

Palestine Railway Workers

Mr. W. Dobbie (Rotherham—Lab.), on August 7, asked the Under-Secretary of State for the Colonies whether he was yet in a position to make a statement relative to the condition of the railwaymen of Palestine.

Mr. George Hall (Under-Secretary of State for the Colonies) stated that the High Commissioner for Palestine was being consulted on the matter.

Railway Workers in Nigeria

Mr. W. Dobbie (Rotherham—Lab.), on August 7, asked the Under-Secretary of State for the Colonies whether he was now able to make a statement in regard to the case of the railwaymen of Nigeria, details of which had been forwarded to him.

Mr. George Hall (Under-Secretary of State for the Colonies) stated that the Governor of Nigeria had been asked to furnish the information, but the Governor's reply had not yet arrived.

Cheap Day Return Tickets

Mr. H. Brooke (Lewisham West—C.), on August 7, asked the Parliamentary Secretary to the Ministry of War Transport whether he was aware that numbers of people who came to London with cheap day return tickets made the return journey during the hours when traffic was at its peak; and whether he would arrange that these tickets should not be available on the London suburban services for the return journey during the hours of peak traffic in the autumn and winter.

Colonel Llewellin stated: Yes, Sir; it is proposed that from October 1 next to March 31, 1942, cheap day return tickets to London shall not be available for the return journey between 4.30 p.m. and 6.30 p.m. on Mondays to Fridays inclusive.

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices Aug. 15, 1941	Prices Rise/Fall
G.W.R.				
Cons. Ord.	52	22¼	37½	+ ½
5% Con. Pref. ...	103½	58	99½	—
5% Red. Pref. (1950)	105½	88	103	—
4% Deb.	107½	90¼	105½	— 1
4½% Deb.	108½	96½	108	— 1
4½% Deb.	114¾	96	115¼	—
5% Deb.	124	106	128	— 1
2½% Deb.	66½	57	66	—
5% Rt. Charge ...	117¾	97	122½	— 2
5% Cons. Guar. ...	117	90¼	119½	— 1
L.M.S.R.				
Ord.	24⅞	9	14¾	— ¼
4% Pref. (1923) ...	60½	21⅛	44½	— 1
4% Pref.	70¾	35	61¼	+ 1
5% Red. Pref. (1955)	94½	60	88¼	+ 3
4% Deb.	101¾	81	101½	—
5% Red. Deb. (1952)	109½	102	108	—
4% Guar.	93¾	65	93½	—
L.N.E.R.				
5% Pref. Ord. ...	8⅜	1½	3	—
Def. Ord.	4⅜	1¼	1¾	—
4% First Pref. ...	60	20	44½	—
4% Second Pref. ...	22⅞	6½	16½	—
5% Red. Pref. (1955)	80	34½	70½	+ 1
4% First Guar. ...	86½	56	84½	—
4% Second Guar. ...	77½	37	73¼	—
3% Deb.	73½	54½	75½	—
4% Deb.	97⅜	74	100½	—
5% Red. Deb. (1947)	107	96¾	104	—
4½% Sinking Fund Red. Deb.	104	98	101½	—
SOUTHERN				
Pref. Ord.	79	34	56½	+ 1
Def. Ord.	22½	7	12¾	+ ¼
5% Pref.	104½	58⅜	96½	— 1
5% Red. Pref. (1964)	105	85	103½	—
5% Guar. Pref. ...	116¾	90	120	— 1½
5% Red. Guar. Pref. (1957)	114⅞	94	111¼	—
4% Deb.	106¾	84½	104½	—
5% Deb.	122½	100	126½	—
4% Red. Deb. (1962–67)	106	96½	105	—
4% Red. Deb. (1970–80)	106⅜	93	105	—
FORTH BRIDGE				
4% Deb.	95½	87	94½	—
4% Guar.	93½	81¼	94½	—
L.P.T.B.				
4½% "A"	116	103	113½	—
5% "A"	121½	107	123½	—
4½% "T.F.A." ...	105½	101	101½	—
5% "B"	116	102	109½	—
"C"	65½	24	41½	+ 3
MERSEY				
Ord.	26	18½	20½	—
4% Perp. Deb. ...	92½	86½	92½	—
3% Perp. Deb. ...	68	63	66½	—
3% Perp. Pref. ...	57	50½	56	—
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	7	—
G. SOUTHERN				
Ord.	12½	4	5	—
Pref.	15½	6	7½	—
Guar.	36	15	23	—
Deb.	55½	40	47½	— 2½

OFFICIAL NOTICES

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Notes and News

Head-on Collision on the C.P.R.—On July 22, two transcontinental Canadian Pacific passenger trains collided head-on at Tripoli, Ontario, about 25 miles east of White River. The engine of the eastbound train was derailed, as well as four cars. No passengers were injured, but one of the drivers lost his life. The other, and one of the firemen were injured.

The Wady Natron Railway.—The annual report of the Egyptian Salt & Soda Co. Ltd. shows that in the year to August 31, 1940, provision was made for the placing to reserve of £E.49,908 for replacement and renewal of plant and railway materials of various works. The company owns the Khatatbah-Wady Natron Railway, which has increased its length of line open from 56 km. to 75 km.

Compagnia Italiana Turismo (C.I.T. England) Limited.—Creditors of this company are required on or before September 2 to send particulars of their claims to the liquidator, Mr. David Howatt Allan, of 17, St. Helen's Place, E.C.3, and, if so required, by written notice from him, to attend by their solicitors, or personally, to come and prove their claims at such time and place as shall be specified in that notice.

Mittel - Europaisches Reiseburo Limited.—At a meeting of creditors of this company (now in voluntary liquidation) held on August 19, at 12 noon, at the office of Messrs. Edward Myers, Clark & Co., Chartered Accountants, of 7 and 8, Norfolk Street, Strand, W.C.2, Mr. J. B. Prentice, F.C.A., of 7 and 8, Norfolk Street, W.C.2, was appointed Liquidator in the place of the late Mr. D. B. Drake. The notice of the meeting, in *The London Gazette*, was signed "Southern Railway Company, J. E. Brain, their Acting Secretary and duly authorised Agent."

Road Accidents in June.—The return issued by the Ministry of War Transport of the number of persons reported to have died as a result of road accidents in Great Britain during the month of June, 1941, is compiled in a slightly different form from that which has hitherto been customary. The most recent return shows also persons injured, divided into two categories, seriously and slightly, but without explanation as to the basis of the distinction. As these figures were not previously compiled no comparisons are available with a year ago. The number of persons who died as a result of road accidents in June last was 618, against 479 in June, 1940. Of these fatal accidents 41 (against 92) occurred during the hours of darkness, and 577 (against 387) at other times. The total number of those seriously injured during June last was 3,592; those slightly injured numbered 11,593.

Scinde Punjaub & Delhi Railway Annuities.—In accordance with the provisions of the Act 49 Vic. Cap. 42 it is notified that on June 30, 1941, a total sum of £3,513,758 11s. 9d. was invested for the purpose of providing a sinking fund for Class "B" annuities of the Scinde Punjaub & Delhi Railway Company.

Great Southern Railways (Eire).—For the 31st week of 1941 the Great Southern Railways Company reports passenger receipts of £57,954 (against £61,700), and goods receipts of £41,346 (against £41,575), making a total of £99,300 (against £103,275) for the corresponding period of the previous year. The aggregate receipts to date are passenger £1,216,893 (against £1,066,107), goods £1,536,550 (against £1,405,746), making a total of £2,753,443 (against £2,471,853).

L.M.S.R. Extension of Time Application.—The London Midland & Scottish Railway Company is applying to the Minister of War Transport for an Order under the Special Enactments (Extension of Time) Act, 1940, extending by three years the time now limited by: (1) Section 37 of the L.M.S.R. Act, 1936, for the completion of Works Nos. 1 and 2 at Fleetwood authorised by Section 5 of the L.M.S.R. Act, 1931; and (2) Section 11 of the L.M.S.R. Act, 1938, for the acquisition of lands at Rugby, Baginton, and Hampton-in-Arden, authorised to be acquired by Section 7 of the 1938 Act.

Institution of Railway Signal Engineers, Informal Summer Meeting.—As it was impossible to hold the customary summer meeting this year, the council of the Institution of Railway Signal Engineers arranged an informal evening gathering at the Spider's Web Restaurant, Watford By-Pass, on August 1. Mr. James Boot, the President, was in the chair, supported by Mr. R. Falshaw Morkill, who, as announced at page 41 of our issue of July 11, has recently been elected Vice-President, in succession to Mr. H. W. Moore; Messrs. J. Punter, R. S. Griffiths, and H. M. Proud, Past Presidents; with some Members of Council and the Hon. Treasurer. Messages regretting inability to attend were received from Mr. G. H. Crook, Past President; Mr. M. G. Tweedie, Hon. Secretary; and from Mr. W. C. Acfield, Past President. Mr. Boot expressed the regret of the Council at Mr. Moore's resignation and its appreciation of Mr. Morkill's action in accepting the office of Vice-President. Mr. Boot thanked the General Purposes Committee for its services in arranging the meeting.

Railway and Other Reports

Great Northern Railway Company (Ireland).—The directors have decided to pay, on October 1, the arrears of dividends (less income tax) to the holders of the consolidated guaranteed stock for the two years to December 31, 1940. The directors regret that there are not earnings available for the payment of dividends on the preference and ordinary stocks.

Great Southern Railways Company.—The directors have decided that in view of the uncertainty of the general position, particularly as to coal supplies and the constantly increasing cost of all materials, the question of payment of dividends on the 4 per cent. guaranteed preference stock, and on the preference and ordinary stocks of the company, be deferred until the accounts for the whole year be available.

Rhodesia Railways Trust Limited.—A dividend of 12 per cent., less tax, is being paid for the year to March 31 last, against 6 per cent., less tax, for the preceding year.

Metropolitan Railway Surplus Lands Co. Ltd.—No interim dividend is being paid in respect of the current financial year (same).

Scottish Machine Tool Corporation Limited.—Net profit for the year to March 31, 1941, amounted to £74,856 (£72,444). The final dividend recommended is 3½ per cent., making 6 per cent. for the year, against 8 per cent. A sum of £57,900 is transferred to reserve for taxation.

Richard Thomas & Co. Ltd.—The directors announce that a full year's dividend, less tax, will be paid on August 30, on the 6½ per cent. preference shares for the year ended March 31, 1941.

W. & T. Avery Limited.—After depreciation and taxation, net profit for the year to March 31, 1940, was £130,660 (against £151,098). The final dividend is 10 per cent., again making the total for the year 15 per cent.

Railway Stock Market

Most sections of the Stock Exchange commenced the current week with a strong upward movement in values, encouraged by improvement in the volume of business. As the higher prices failed to induce any appreciable selling, firm market conditions were again accompanied by scarcity of stock. Consequently, in many directions, security values were inclined to respond strongly to moderate improvement in demand. General expectations are that over a period the trend in British Funds will continue upwards, bearing in mind the weight of money available for investment. Based on probable dividend payments, many industrial shares of the ordinary or equity class now show very moderate yields at current prices; but in numerous instances the main market influence is not so much the question of dividend-yield as scope for capital appreciation on post-war recovery prospects, the assumption being that market values will tend to discount the future a very long way ahead. On the other hand, it must be expected that from time to time markets will fluctuate on the nature of war and international developments. Although the prevailing influence is to await the new financial arrangement between the Government and the railways, home railway stocks have reflected the upward trend of values on the Stock Exchange, and were in increased demand, sentiment having been assisted by the belief that announcement of the terms of the new arrangement will not be long delayed. Various prior charge stocks moved better, partly on the belief that a good proportion of the proceeds arising from the latest requisitioning of Canadian securities will be reinvested in stocks of this type. Nevertheless, the junior issues attracted a fair amount of speculative buying, although it is realised that their dividend prospects will turn on the terms of the financial agreement with the Government. The assumption in many quarters is that dividends at around last year's rates are likely to rule until three years after the war, and that on this basis, these stocks would appear moderately priced in comparison with numerous industrial and other securities. On the other hand, it is realised that good yields are still obtainable on senior preference, guaranteed, and other prior charges with sound investment merits.

Compared with a week ago, Great Western ordinary has moved up from 37¼ to 38¾ at the time of writing, but the preference stock remained around par, and the debentures were unchanged on balance. In accordance with the general tendency, L.M.S.R. ordinary appreciated to 15¼, which compares with 14½ a week ago, and increased attention was given to the 1923 preference, which further improved from 45¼ to 46½. L.M.S.R. senior preference was firm at 63, and more attention was given to the guaranteed and debenture stocks. L.N.E.R. first preference, which as mentioned here on various occasions, also gives a generous yield, improved to 46½, compared with 45 a week ago; but the first and second guaranteed at 84½ and 73 respectively were virtually unchanged on balance. There was a fair amount of speculative activity in L.N.E.R. second preference, which has risen to 17½, compared with 16¼ a week ago. This railway's 5 per cent. preference stock made the higher price of 71½. Southern deferred was active, and was 13¼, compared with 12½ a week ago, and the preferred was 56½, compared with 55¾; but as in various other instances, movements in the preference and senior stocks were relatively moderate. With any sustained rise in gilt-edged securities, it can be expected that prices of railway prior charges and other stocks of the fixed interest-bearing class will show response. Meanwhile it would appear that yields on such issues as L.M.S.R. 1923 preference and L.N.E.R. second guaranteed and first preference compare not unfavourably with those on most of the junior stocks. Among the latter, London Transport "C" has risen from 39 to 43¾.

Argentine railway securities again attracted more attention at better prices, but the rise in the latter was probably out of proportion to the demand experienced. San Paulo ordinary also moved higher. Elsewhere, Canadian Pacific common shares improved.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1940-41	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1940	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1940	Prices: Lowest 1940	Prices: Aug. 15, 1941	Prices: Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	10.8.41	15,070	+ 8,550	32	586,740	566,950	+ 19,790	Ord. Stk.	11¼	3½	6½	Nil
	Argentine North Eastern ...	753	9.8.41	ps. 229,100	+ ps.60,800	6	ps. 1,197.100	ps.1,039,900	+ ps.157,200	,,	3¾	1	2	Nil
	Bolivar	174	July, 1941	3,795	— 255	30	26,867	28,630	— 1,763	6 p.c. Deb.	6½	5	6½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	5	5⅝	Nil
	Buenos Ayres & Pacific ...	2,801	2.8.41	ps.1,355,000	+ ps.210,000	5	ps.6,802,000	ps. 5,561,000	+ ps.1,241,000	Ord. Stk.	4½	1	4	Nil
	Buenos Ayres Great Southern	5,082	2.8.41	ps.2,194,000	+ ps. 85,000	5	ps.9,639,000	ps. 9,763,000	— ps. 124,000	Ord. Stk.	10⅜	3	7½	Nil
	Buenos Ayres Western ...	1,930	2.8.41	ps.830,000	+ ps.203,000	5	ps. 3,722,000	ps. 3,119,000	+ ps. 603,000	,,	8⅜	2	4½	Nil
	Central Argentine	3,700	9.8.41	ps. 1,717,500	+ ps.251,900	6	ps.10,053,100	ps. 8,770,700	+ ps.1,282,400	,,	8½	2	4½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4	½	1¼	Nil
	Cent. Uruguay of M. Video	972	2.8.41	21,899	+ 3,504	5	105,625	83,556	+ 22 069	Ord. Stk.	3½	½	2½	Nil
	Costa Rica	188	June. 1941	19,190	+ 5,543	52	185,942	206,986	— 21,044	Stk.	23½	14	13	15⅞
	Dorada	70	July, 1941	13,000	— 200	30	88,300	85,200	+ 3,100	1 Mt. Db	99	97½	97	6⅛
	Entre Rios	808	9.8.41	ps. 355,100	+ ps.127,200	6	ps. 1,804,100	ps. 1,485,600	+ ps.318 500	Ord. Stk.	4	½	2½	Nil
	Great Western of Brazil ...	1,016	9.8.41	7,800	+ 900	32	288,000	322,900	— 34,900	Ord. Sh.	4/-	1/-	1/-	Nil
	International of Cl. Amer. ...	794	June, 1941	$514,782	+ $50,639	26	$3,036,575	$3,305.093	— $268,518	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	9d.	9d.	½	Nil
	La Guaira & Caracas... ...	22¾	July,1941	8.030	+ 1.855	30	43.245	45.615	— 2,370	—	6	4	—	—
	Leopoldina	1,918	2.8.41	31,229	+ 5,266	31	753,952	675,966	+ 77.986	Ord. Stk.	2⅜	¼	1½	Nil
	Mexican	483	7 8.41	ps. 297,300	— ps. 56,500	5	ps. 1,639,500	ps. 1,483,700	+ ps.155,800	,,	2/11½	⅜	⅜	Nil
	Midland of Uruguay ...	319	June, 1941	14,941	+ 4,304	52	151,105	131,660	+ 19,445	—	—	—	—	—
	Nitrate	386	31.7.41	9,807	+ 4,324	30	68,639	103,421	— 34,782	Ord. Sh.	2¼	1	2⅛	5⅞
	Paraguay Central	274	2.8.41	$3,319,000	— $1,594,000	5	$16,926,000	$20,867,000	— $3,761,000	Pr. Li. Stk.	41	36	35½	8⅛
	Peruvian Corporation ...	1,059	July, 1941	65,550	+ 129	4	65,550	65,421	+ 129	Pref.	4	1	2½	Nil
	Salvador	100	7.6.41	c21,728	+ c12.814	49	772,984	c946,257	— c173,273	—	—	—	—	—
	San Paulo	153½	3.8.41	42,625	+ 2.695	31	c1,160.812	1,148,384	+ 12,428	Ord. Stk.	50	23	31½	6⅜
	Taltal	160	July, 1941	3,180	+ 1,095	4	3,180	2,085	+ 1,095	Ord. Sh.	15/1½	⅜	⅜	Nil
	United of Havana	1,346	9.8.41	20,675	+ 4,952	6	112.099	99,092	+ 13,007	Ord. Stk.	⅜	¼	1	Nil
	Uruguay Northern	73	June, 1941	1,127	+ 260	52	13,937	13,222	+ 715	—	—	—	—	—
Canada	Canadian National	23,579	7.8.41	1,124,005	+ 231,129	31	34,598,191	28,108,193	+ 6,489,998	—	—	—	—	—
	Canadian Northern ...	—	—	—	—	—	—	—	—	Perp. Dbs.	86	68	91½	4⅜
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gr.	105¾	95½	101½	3½
	Canadian Pacific	17,153	7.8.41	849,200	+ 163,400	31	24,689.000	18,823,400	+ 5,865,600	Ord. Stk.	9⅞	4⅛	9½	Nil
India†	Assam Bengal...	1,329	—	—	—	—	—	—	—	Ord. Stk.	99⅜	71	100	3
	Barsi Light	202	20.5.41	5,692	+ 1,882	7	31,230	21,030	+ 10,200	—	—	—	—	—
	Bengal & North Western ...	2,086	July,1941	251,700	+ 24,153	18	1,059,825	1,065,348	— 5,523	Ord. Stk.	283	234	302	5⅜
	Bengal-Nagpur	3,269	31.5.41	283,725	+ 21,334	9	1,509,300	1,552,418	— 43,118	,,	96	83⅜	100½	4
	Bombay, Baroda & Cl. India	2,986	31.7.41	343,275	+ 108,750	18	3.556,200	3.386,400	+ 169,800	,,	108	99	108½	5½
	Madras & Southern Mahratta	2,939	20.5.41	193,875	+ 889	7	974,550	977.665	— 3,115	,,	104	97⅜	102½	7⅛
	Rohilkund & Kumaon ...	571	July 1941	54,975	+ 4,907	18	247,875	252,087	— 4,212	,,	284	238	299	5⅜
	South Indian	2,500	20.5.41	140,378	+ 13,073	7	691,539	626,491	+ 65,048	,,	93⅜	83	97½	4⅜
Various	Beira	204	June, 1941	78,601	—	39	652.953	—	—	—	—	—	—	—
	Egyptian Delta	610	31.5.41	6,743	+ 2,233	9	38,668	28,265	+ 10,403	Prf. Sh.	7/10½	⅜	½	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	53	44½	61½	5½
	Midland of W. Australia ...	277	Mar. 1941	14,597	+ 2,092	39	134,201	115,376	+ 18,825	Inc. Deb.	88	80	87½	6⅜
	Nigerian	1,900	31.5.41	55,965	+ 26,234	9	488,613	342,694	+ 145,919	—	—	—	—	—
	Rhodesia	2,442	June, 1941	454,594	—	39	4,217,610	—	—	—	—	—	—	—
	South Africa	13,291	28.6.41	764,620	+ 52,579	13	9,340,830	8,377,659	+ 963,171	—	—	—	—	—
	Victoria	4,774	Apl. 1941	999,841	+ 183,876	44	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛ Argentine traffics are given in pesos

† Receipts are calculated @ 1s. 6d. to the rupee